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PSEG NUCLEAR LLC
EOF IMPLEMENTING PROCEDURES
May 24, 2001

CHANGE PAGES FOR
REVISION #07

The Table of Contents forms a general guide to the current revision of each section of the EOF EPIP. The changes that are made in this TOC Revision #07 are shown below. Please check that your revision packet is complete and remove the outdated material listed below:

ADD			REMOVE		
Page	Description	Rev.	Page	Description	Rev.
All	T.O.C.	07	All	T.O.C.	06
All	NC.EP-EP.ZZ-0601	03	ALL	NC.EP-EP.ZZ-0601	02
All	NC.EP-EP.ZZ-0602	01	ALL	NC.EP-EP.ZZ-0602	00
All	NC.EP-EP.ZZ-0603	03	ALL	NC.EP-EP.ZZ-0603	02
All	NC.EP-EP.ZZ-0604	01	ALL	NC.EP-EP.ZZ-0604	00

PSE&G CONTROL COPY # EPIP059

PSEG NUCLEAR LLC EMERGENCY PLAN
EOF IMPLEMENTING PROCEDURES
TABLE OF CONTENTS
May 24, 2001

EMERGENCY OPERATIONS FACILITY (EOF) PROCEDURES

PSEG NUCLEAR LLC

NC.EP-EP.ZZ-0601 (Q) - REV. 03

RADIOLOGICAL SUPPORT MANAGER AND RADIOLOGICAL ASSESSMENT STAFF RESPONSE

PSE&G CONTROL COPY # EPIP059

USE CATEGORY: II

REVISION SUMMARY:

1. This revision satisfies the requirement for a biennial review.
2. Deleted Attachment 8, Procedure Completion Sign-off Sheet. This attachment is not required by NAP-1, causes confusion, and adds no value to the procedure.
3. Changed Technical Specification to Offsite Dose Calculation Manual (ODCM)/Federal Limits wording in the note found in Attachment 2 after step 1.1.7. This use to be in Technical Specifications, but was recently moved to the ODCM.
4. Made some minor editorial changes in Attachment 6 and Attachment 7.

IMPLEMENTATION REQUIREMENTS

This procedure is effective for use upon issue.

5-24-01

APPROVED: _____ EP Manager — 5/9/01 Date

APPROVED: N/A Vice President - Operations — N/A Date

RADIOLOGICAL SUPPORT MANAGER AND RADIOLOGICAL ASSESSMENT STAFF RESPONSE

TABLE OF CONTENTS

1.0 PURPOSE

To outline and describe the Radiological Support Manager's (RSM) duties during a declared emergency

2.0 PREREQUISITES

2.1 Prerequisites To Be Followed Prior To Implementing This Procedure

Implement this procedure at:

- The discretion of the ERM.
- Upon staffing of the EOF.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precaution and Limitations To Be Followed Prior To Implementing This Procedure

3.1.1 Medical care takes priority over any radiological conditions unless the radiological conditions are life threatening.

3.1.2 It is recommended that initials be used in the place keeping sign-offs, instead of checkmarks, if more than one person may implement this procedure.

3.1.3 Personnel who implement this procedure shall be trained and qualified IAW the Emergency Plan.

3.1.4 All steps listed in this procedure may be implemented at users discretion.

4.0 EQUIPMENT REQUIRED

As provided in the EOF.

5.0 PROCEDURE

5.1 RSM Duties

5.1.1 REPORT to the ERM to receive a briefing of the current status of the emergency. _____

5.1.2 UPDATE the ERM of changing radiological conditions, as appropriate. _____

5.1.3 IMPLEMENT Attachment 1, Pre-activation RSM Checklist. _____

6.0 RECORDS

Return completed procedure and any information or data thought to be pertinent to the EP Manager

7.0 REFERENCES

7.1 References

None

7.2 Cross References

7.2.1 NC.EP-EP.ZZ-0602(Q) Radiological Dose Assessment

7.2.2 NC.EP-EP.ZZ-0603(Q) Field Team Monitoring

7.2.3 NC.EP-AP.ZZ-1014(Q, Emergency Preparedness Classroom Training Administration

7.2.4 PSEG Nuclear Emergency Plan

ATTACHMENT 1
Page 1 of 2

PRE-ACTIVATION RSM CHECKLIST

1.0 **PRE-ACTIVATION RSM CHECKLIST**

1.1 **RSM Should Ensure The Following Items are Performed:**

1.1.1 INITIATE the RSM log. _____

1.1.2 CONTACT the RAC for a current briefing of the on/offsite radiological conditions. _____

1.1.3 ASSIGN the Radiological Assessment Staff Members (D2's) functions are as follows:

- **Dose Assessment**
  (Refer to NC.EP-EP.ZZ-0602(Q), Radiological Dose Assessment):

  _____/_____
  (Name) (Name)

- **Habitability, EOF Emergency Ventilation and Environmental Sampling Issues**
  (Refer to Attachment 4, Habitability, EOF Emergency Ventilation and Maplewood Lab Instructions):

  _____/_____
  (Name) (Name)

- **RMS and Meteorological (MET) Trending and Forecast**
  (Refer to Attachment 3, State Liaison and RMS Trending Instructions):

  _____/_____
  (Name) (Name)

- **Coordinating and Tracking Offsite Field Teams Location and Sampling**
  (Refer to NC.EP-EP.ZZ-0603 (Q), Field Monitoring):

  _____/_____
  (Name) (Name)

- **State Liaison**
  (Refer to Attachment 3, State Liaison and RMS Trending Instructions):

  _____/_____
  (Name) (Name)

1.1.4 ENSURE the Radiological Assessment Staff is staffed to perform the D2 tasks as outlined above, as thought appropriate. _____

1.1.5 ASSIGN personnel to fill each appropriate function and designate an Assistant RSM. _____

ATTACHMENT 1
Page 2 of 2

1.1.6 VERIFY the following tasks are performed:

- IF a General Emergency has been declared, THEN Perform EOF habitability every 30 minutes IAW Attachment 4, if thought appropriate. _____
- EOF Radiological Assessment equipment is functioning properly. _____
- AMS is turned on and the alarm set for 2 times the current background. _____
- Dose Assessment can be performed IAW NC.EP-EP.ZZ-0602(Q), Radiological Dose Assessment. _____
- Offsite Field Monitoring Teams are functional or in the process of becoming functional. _____
- Current and forecast meteorological data has been acquired or is in the process of being acquired. _____

1.1.7 CONTACT the RAC prior to activation of the EOF to receive an update of the Inplant and Onsite radiological conditions. _____

1.1.8 IMPLEMENT Attachment 2, RSM Checklist:

- Upon completion of Attachment 1. _____
- As thought appropriate by the RSM. _____

ATTACHMENT 2

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RSM CHECKLIST

NOTE

- The order that these steps may be performed at the RSM's discretion. Asterisk (*) steps may NOT be delegated.
- Mark steps that are not applicable N/A and explain why the step is N/A on Attachment 8, Completion Sign-off Sheet.

RSM's Name: _____/_____/_____
(Print) (Sign) (Date)

1.0 **RSM CHECKLIST**

1.1 **The RSM Should Ensure The Following Items are Performed:**

1.1.1 CONTINUE keeping the RSM log. _____

1.1.2 ENSURE Offsite Radiological Dose Projections are being performed IAW NC.EP-EP.ZZ-0602(Q), Radiological Dose Assessment, and the SSCL Page 2 is being produced every 30 minutes. _____

NOTE

Medical care takes priority over any radiological conditions unless the radiological conditions are life threatening.

1.1.3 COORDINATE the transportation of any contaminated injured person offsite with the RAC. _____

ATTACHMENT 2

Page 2 of 3

1.1.4 *AUTHORIZE issuance of KI as appropriate IAW NC.EP-EP.ZZ-305(Q)/EPIP 305S(H), Stable Thyroid Blocking. _____

1.1.5 BRIEF EOF Radiological Assessment Staff as changing conditions warrant. _____

1.1.6 ASSIST with Event Classification. _____

1.1.7 *PROVIDE Protective Action Recommendations (PARs), as appropriate, IAW NC.EP-EP.ZZ-0404(Q), Protective Action Recommendations (PAR). _____

NOTE

A radiological release is in progress when the Noble Gas (NG) Offsite Dose Calculation Manual (ODCM)/Federal Limits are met or exceeded.
Hope Creek ODCM Limits = 1.20E+04 uCi/sec.
Salem NG ODCM Limits = 2.42E+05 uCi/sec.

1.1.8 ENSURE Maplewood Lab is contacted by assigned personnel IAW Attachment 4, Instructions For Habitability, EOF Emergency Ventilation, and Maplewood Labs. _____

1.1.9 PERFORM the following applicable steps if a **RADIOLOGICAL RELEASE** is in progress:

- INFORM the ERM immediately when it is known a radiological release is in progress. _____
- OBTAIN frequent briefings concerning the Offsite Field Team's assignments from Offsite Team Coordinator (OTC) reports. _____
- CONSIDER moving essential equipment from the Guard House and the Processing Center. _____
- OBTAIN ERM approval for the Coast Guard or Helicopter assistance in tracking the plume, if thought necessary _____
- INITIATE Contamination Controls IAW Step 1.1.10, Part A, of this Attachment. _____

ATTACHMENT 2

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- DIRECT the setup of a vehicle decon area, IAW NC,EP-EP.ZZ-0308(Q)/EPIP 308S(H), Personnel/Vehicle Survey and Decontamination, if necessary. _____

- COORDINATE with the RAC and recommend travel routes, modes of transportation, and appropriate controls in/out of Salem and Hope Creek Stations for all vehicles and personnel. _____

1.1.10 PERFORM the following applicable steps upon the declaration of a **GENERAL EMERGENCY**, if thought appropriate:

A. IMPLEMENT Contamination Controls. _____

- No Eating, Drinking, or Smoking.
- Setup Step Off Pads (SOP). _____
- Establish Radiological Postings. _____

B. ENSURE habitability is being performed every 30 minutes IAW Attachment 4 of this procedure. _____

C. ENSURE Emergency Ventilation is turned on IAW Attachment 4 of this procedure, if:

- A radiological release is in progress and the current or forecast meteorological conditions show a radiological plume will enter the Sector that the EOF is located (NNE).

D. PLACE SRDs at the front and rear entrances of the Nuclear Training Center, Room 50 (Admin Support Area), and in the EOF proper. Log all SRDs on Form – 1, EOF SRD Log. _____

ATTACHMENT 3

STATE LIAISON AND RMS TRENDING INSTRUCTIONS

1.0 **STATE LIAISON**

1.1 **The State Liaison Should Perform The Following:**

1.1.1 ESTABLISH communications with the representatives from the States of New Jersey, Delaware, and the NRC, upon their arrival at the EOF. _____

1.1.2 PROVIDE State personnel 15 minute updates of RMS data, as soon as possible. _____

1.1.3 REFER State and Federal personnel to the RMS Status Board for current and trended RMS data. _____

1.1.4 REFER State and Federal personnel to appropriate contacts in the EOF, when applicable. _____

2.0 **RMS AND MET TRENDING**

2.1 **Perform The Following To Trend RMS And MET Data:**

2.1.1 OBTAIN radiological data from the following sources:

- **(HOPE CREEK ONLY)** VAX LA120 (Refer to Attachment 6, Operation of VAX LA120 Terminal). _____
- **(SALEM UNITS 1 & 2 ONLY)** SPDS Radiation Monitoring Screens (Refer to Attachment 7, instructions For SPDS Displays). _____
- Control Room FAX from a Radiation Protection Technician. _____

A. INFORM the RSM immediately, **INCLUDING INTERRUPTING MEETINGS**, and then the State Liaison, if any of the High Range Containment or Effluent Monitors indicate the following values. _____

(HOPE CREEK ONLY)

- DAPA "A" or DAPA "B" = $\geq$ 5000 R/hr.(indication fuel clad barrier has been lost) _____
- NPV, SPV, FRVS, or HTV = $\geq$ 1.20E+04 uCi/sec. (NG TS limits) _____

ATTACHMENT 3

Page 2 of 2

(SALEM UNITS 1 & 2 ONLY)

- R44 "A" or R44 "B" = > 300 R/hr. (indication fuel clad and RCS barriers have been lost) _____
- R41 "D" = 2.42E+05 uCi/sec. (NG TS limits) _____

2.1.2 OBTAIN MET data from one of the following sources:

A. VAX LA120 _____

B. Salem or Hope Creek TSC _____

C. Salem or Hope Creek Control Room _____

D. National Weather Service (609-261-6604) or 609-261-6602) _____

2.1.3 ENSURE the RMS data is being recorded and updated on the RMS Status Board approximately every 15 minutes, or as instructed by the RSM. _____

2.1.4 INFORM the RSM if current meteorological data is within three degrees of another sector, if a PAR has been or is being made. _____

2.1.5 REFER to Attachment 5, RMS Quick Reference, for information on Effluent and Area Radiation Monitors at Hope Creek and Salem. _____

2.1.6 REFER to the Salem RMS Manual and Hope Creek Procedure HC.RP-AR.SP-0001(Q), Radiation Monitoring System Alarm Response, for more detailed RMS information. _____

ATTACHMENT 4

Page 1 of 3

HABITABILITY, EOF EMERGENCY VENTILATION AND MAPLEWOOD LAB INSTRUCTIONS

1.0 HABITABILITY

1.1 Habitability Should Be Performed In The Following Manner:

1.1.1 PERFORM EOF Habitability every 30 minutes, if a GENERAL EMERGENCY is declared. _____

1.1.2 LOG results on Form 3, EOF Habitability Log. _____

1.1.3 REFER to the following steps for appropriate actions to be taken:

- External dose equivalent (EDE) dose rates are > 500 mR/hr. within the facility, immediate evacuation should be considered. _____
- EDE dose rates are > 250 mR/hr. within the facility, evacuation within (1) hour should be considered. _____
- The EDE dose rates are ≥ 50 mR/hr., but ≤ 250 mR/hr. within the facility, evacuation within (2) hours should be considered. _____

1.1.4 PERFORM a survey of areas inside and outside the Nuclear Training Center, as thought appropriate by the RSM, and log on Form – 3, EOF Habitability Log. _____

1.1.5 SETUP the AIR Monitoring Sampler and set background to 2 times current background. _____

2.0 EOF Emergency Ventilation

2.1 Place the EOF Ventilation In Service By:

2.1.1 ENTER the Mechanical Room (Room 46). _____

2.1.2 LOCATE the EOF Bypass Switch #1 on the right hand wall. _____

ATTACHMENT 4

Page 2 of 3

2.1.3 POSITION the Bypass Switch to the "ON" position. _____

2.1.4 LOCATE the DP Gauge next to the Lead's Conference Room. _____

2.1.5 PRINT the DP Gauge value on the indicated line below. _____

_____(W.C.)

(DP GAUGE VALUE)

2.1.6 NOTIFY the RSM if the value indicates < 0.025 inches. _____

3.0 EOF VENTILATION MAINTENACE

3.1 Perform The Following Maintenance On The EOF Ventilation:

3.1.1 IF the following conditions exist, THEN perform the following maintenance/ALARA tasks on the EOF Emergency Ventilation HEPA Units.

- If the EOF is in the plume path, ensure the HEPA is dose rated every hour after it is started. _____
- If the contact dose rate is ≥ 500 mR/hr., ensure that consideration is given to changing out the HEPA units. _____

NOTE

Contact the Radiation Protection Supervisor – Offsite, for additional technical support (people, advice concerning handling, storage, etc.) in changing out the HEPA filters, if necessary.

3.1.2 IF any of the following occurs, THEN ensure the HEPA units are changed out IAW NC.EP-EP.ZZ-1016(Z)/EPIP 1016, Test Procedures for Backup Generator Vent System and HVAC Filter Replacement.

- Dose rates are > 1000 mR/hr. on contact of the HEPA units. _____
- At a high DP. _____
- At the RSM's discretion. _____

ATTACHMENT 4

Page 3 of 3

4.0 MAPLEWOOD LABS

NOTE

Maplewood Labs phone number may be obtained from Admin. Support.

4.1 Contact Maplewood Research and Testing Lab If:

- A radioactive release is thought to be likely. _____
- A radioactive release is in progress. _____

4.2 Request Personnel From Maplewood Labs To Perform The Following

4.2.1 ASSEMBLE emergency environmental sampling personnel. _____

4.2.2 CONSIDER the change out of air samples and TLDs in the downwind sector from the radioactive plume and two sectors to each side. _____

4.2.3 REQUEST the coordinator from Maplewood Labs to come to the EOF, if environmental sampling is going to occur. _____

ATTACHMENT 5

RMS QUICK REFERENCE

1.0 **Salem RMS (Unit 1 and 2)**

R2 is an Area Radiation Monitor (ARM) located in Containment on the 130' elevation.
Ranges: 1E-01 to 1E+04 mR/hr.

R7 is an ARM located in Containment on the 100' elevation, adjacent to the Seal Table Room.
Ranges: 1E-01 to 1E+04 mR/hr.

R10A is an ARM located in Containment on the 100' elevation next to the personnel airlock.
Ranges: 1E-01 to 1E+04 mR/hr.

R10B is an (ARM) located in Containment on the 130' elevation next to the personnel airlock.
Ranges: 1E-01 to 1E+04 mR/hr.

R16 Plant Vent Stack is located in the Plant Vent duct at 194' elevation and monitors what is going out the Plant Vent stack.
Ranges: 1E+01 to 1E+06 CPM

R34 is an ARM located in the Mechanical Penetration across from the 100' elevation Containment personnel Airlock.
Ranges: 1E-01 to 1E+06 mR/hr.

R44A is a High Range or Accident Area Radiation Monitor (HARM) located in Containment on the 130' elevation close to the personnel airlock.
Ranges: 1E+00 to 1E+07 R/hr.

R44B is a (HARM) located in Containment on the 100' elevation between the R10A and R7 ARMs.
Ranges: 1E+00 to 1E+07 R/hr.

R47 is an ARM located in the 78' Electrical Penetration. The PASS lines are located in the overhead. The skid and PASS lines may be the source of any increase in this area. This Penetration has its own ventilation flow path and will vent directly into the atmosphere. There is a potential for an unmonitored release from this Penetration.
Ranges: 1E-01 to 1E+07 mR/hr

ATTACHMENT 5

NOTE

- All emergency Grab Samples (Noble Gas, Iodine and Particulate) should be taken from the R45 Skid located in the R45 Shed.
- Only one of the following Effluent Monitors (R41A, R41B, R41C, R45B or R45C) readings should be used in MIDAS Manual Mode.

R41A is the Low Range Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.
Ranges: 1E-07 to 1E-01 uCi/cc

R41B is the Mid Range Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.
Ranges: 1E-04 to 1E-02 uCi/cc

R41C is the High Range Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.
Ranges: 1E-01 to 1E+05 uCi/cc

R41D is the Effluent Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.
Ranges: 0E+00 to 1E+13 uCi/Sec
(The R41D should not be used in MIDAS to perform manual dose assessment calculations)

R45B is the "Backup" Mid Range Noble Gas Monitor and is located in the R45 Shed behind the Fuel Handling Building. This monitor should not be used unless the R41 monitors are inoperable.
Ranges: 1E-03 uCi/cc to 1E+01 uCi/cc

R45C is the "Backup" High Range Noble Gas Monitors and is located in the R45 Shed behind the Fuel Handling Building. This monitor should not be used unless the R41 monitors are inoperable.
Ranges: 1E-01 uCi/cc to 1E+05 uCi/cc

ATTACHMENT 5

Page 3 of 4

2.0 Hope Creek

NOTE

All ARM's in the Reactor Building have maximum ranges of 1.00E+04 mR/hr, except for the Inner Tip Room Monitor (9RX699). The Inner Tip Room Monitor's maximum range is 1.00E+07 mR/hr.

DAPA A and DAPA B (9RX635 and 9RX636) are high range ARMs in the Drywell. DAPA A is approximately twice as high as DAPA B under normal operating conditions. During a LOCA in the Drywell the two monitors should start to trend closer together due to the atmospheric conditions in the Drywell affecting both monitors equally. Increases on both of these monitors while DAPA A's reading stays about twice of what DAPA B is reading, would be an indication of fuel damage.
Ranges: 1.00E+00 to 1.00E+08 R/hr.

Tip Room Inner ARM (9RX699) is located on 102' elevation of the Reactor Building inside the Tip Room. This monitor has the highest range of any ARM in the Reactor Building and could give an idea of what the dose rates in the Reactor Building are after the other ARMs peg out high.
Ranges: 1.00E+00 to 1.00E+07 mR/hr

Main Steam Line A - D monitors (9RX509-512) are four ARMs located in the ceiling of the Main Steam Tunnel. Increases in these monitors would be an indication of fuel damage. These monitors could increase due to shine from the Reactor Building, after a radiological release.
Ranges: 1.00E+00 to 1.00E+06 mR/hr

Safeguard Instrument Room Monitor (9RX704) is an ARM located on 77' elevation of the Reactor Building. An increase on this monitor when the reactor SCRAMs with fuel damage could be due to shine from the Torus.
Ranges: 1.00E-01 to 1.00E+04 mR/hr

ATTACHMENT 5

FRVS Effluent monitor (9RX680) monitors what is going out the FRVS Plant Vent. Under normal operating conditions Reactor Building ventilation would vent through the South Plant Vent. Under accident conditions or when manually initiated, Reactor Building Ventilation isolates and the Reactor Building will vent through the FRVS. FRVS is always a ground release. Values ≥ 1.20E+04 uCi/Sec would be an indication that a radiological release is in progress.
Ranges: 1.00E+00 to 1.00E+12 uCi/Sec

North Plant Vent Effluent (NPV) monitor (9RX590) monitors Offgas and the chemistry lab fume hoods. NPV could be a ground or elevated release depending on the time of year and wind speed. Values ≥ 1.20E+04 uCi/Sec would be an indication that a radiological release is in progress.
Ranges: 1.00E+00 to 1.00E+12 uCi/Sec

South Plant Vent Effluent (SPV) monitor (9RX580) monitors Service Radwaste Building, Turbine Building and the Reactor Building (if FRVS hasn't been initiated). Values ≥ 1.20E+04 uCi/Sec would be an indication that a radiological release is in progress.
Ranges: 1.00E+00 to 1.00E+12 uCi/Sec

Hardened Torus Vent Effluent (HTV) monitor (9RX518) would be used to vent the Drywell to relieve pressure. The path it would take would be through the Torus and take advantage of the scrubbing properties of the Torus water, but the release would considered to be an unfiltered release. Iodines and particulates could be a major concern. Control Room operators would have to open a valve to use this release path. Sampling from the PASS Torus Gas Space should be performed to provide information as to what is being released. Values ≥ 1.20E+04 uCi/Sec would be an indication that a radiological release is in progress.
Ranges: 0.00E+00 to 2.09E+12 uCi/Sec

ATTACHMENT 6

OPERATION OF THE VAX LA120 TERMINAL

1.0 **Meteorological Data**

1.1 **Perform The Following to Obtain Current 15 Minute Average Meteorological Data:**

1.1.1 DEPRESS the RETURN key. (USERNAME should be displayed). _____

1.1.2 ENTER MET and depress the RETURN key _____

> **NOTE**
>
> The most current meteorological data should be printed out followed by the Main Meteorological Menu. If no other keys are depressed, the current 15 minute average data will be printed out every 15 minutes

1.1.3 ENTER Option 3 (Disable Automatic Display of MET Data Every 15 minutes) and depress the RETURN key to STOP the VAX LA120 from printing out meteorological data every 15 minutes. _____

1.1.4 ENTER Option 1 (Display Current Meteorological Data) and depress the RETURN key to receive the current 15 meteorological data print out and assume having the current 15 minute MET data printout automatically. _____

1.2 **Perform The Following Steps to Obtain Archived Meteorological Data:**

1.2.1 DEPRESS the RETURN key. (USERNAME should be displayed) _____

1.2.2 ENTER MET and depress the RETURN key. ((The most current meteorological data should be printed out followed by the Main Meteorological Menu). _____

1.2.3 ENTER Option 2 (Display Meteorological Data From Data Base) and depress the RETURN key. (Current system Date and Time will be displayed). _____

1.2.4 IF this is the data you want, THEN depress the RETURN key. (Your option will be printed out). _____

1.2.5 IF you want data from another date and time, THEN go to Step 1.2.6. _____

ATTACHMENT 6

Page 2 of 3

1.2.6 ENTER start date and time as shown below and depress the RETURN key. (For December 27, 1989 at 0130 enter 27-DEC-1989 "depress the space bar once" and enter 01:30). _____

1.2.7 ENTER "Y" if the information is correct or "N" if the information is not correct and reenter it as shown in Step 1.2.6. _____

1.2.8 ENTER the end date and time as shown below and depress the RETURN key. (For December 28, 1989 at 0230 enter 28-DEC-1989 "depress the space bar once" and enter 02:30). _____

1.2.9 ENTER "Y" if the information is correct or "N" if the information is not correct and re-enter it as shown in Step 1.2.6. _____

2.0 RMS AND MET DATA (FOR HOPE CREEK ONLY)

2.1 Perform The Following Steps to Obtain Current Instantaneous RMS and MET Data:

2.1.1 DEPRESS the RETURN key. (USERNAME should be displayed). _____

2.1.2 ENTER the letters EOF and depress the RETURN key. (A prompt should be displayed asking for PASSWORD). _____

2.1.3 ENTER EOFUSER and depress the RETURN key. (The EOF Plant Menu should be displayed.) _____

2.1.4 SELECT Option 1 for Hope Creek. _____

2.1.5 DEPRESS the RETURN key. (The EOF Report Options Menu will be displayed). _____

2.1.6 ENTER Option 1 (Current RMS Status) and depress the RETURN key. (The most current instantaneous RMS and 15 minute MET data will be printed out.) _____

2.2 Perform The Following Steps to Obtain 15 Minute Average RMS Data:

2.2.1 DEPRESS the RETURN key. (USERNAME should be displayed). _____

2.2.2 ENTER EOF and depress the RETURN key. (A prompt should be displayed asking for PASSWORD). _____

2.2.3 ENTER EOFUSER and depress the RETURN key. (The EOF Plant Menu should be displayed). _____

ATTACHMENT 6

2.2.4 SELECT option 1 for Hope Creek. _____

2.2.5 DEPRESS the RETURN key. (The EOF Report Options Menu should be displayed). _____

2.2.6 SELECT and enter option number 6 (15 Minute Historical Data). (Current system date and time should be displayed. A prompt should be displayed for start date and time) _____

2.2.7 IF this is the data you want, THEN depress the RETURN key. (Your option will be printed out). _____

2.2.8 IF you want data from another date and time, THEN go to Step 2.2.9.DEPRESS the RETURN key for 15 minute average RMS and MET data. (Your selection will be printed). _____

2.2.9 ENTER start date and time as shown below and depress the RETURN key. (For December 27, 1989 at 0130 enter 27-DEC-1989 "depress the space bar once" and enter 01:30). _____

2.2.10 ENTER "Y" if the information is correct or "N" if the information is not correct and reenter it as shown in Step 2.2.9. _____

2.2.11 ENTER the end date and time as shown below and depress the RETURN key. (For December 28, 1989 at 0230 enter 28-DEC-1989 "depress the space bar once" and enter 02:30). _____

2.2.12 ENTER "Y" if the information is correct or "N" if the information is not correct and re-enter it as shown in Step 2.2.9. _____

ATTACHMENT 7

Page 1 of 4

INSTRUCTIONS FOR SALEM SPDS DISPLAYS

NOTE

Values in Red with "HH" displayed are in HIGH HIGH ALARM.
Values in YELLOW with "H" displayed are in HIGH ALARM.

1.0 SALEM 1 & 2 SPDS RADIOLOGICAL SCREEN INSTRUCTIONS

1.1 Follow The Steps Below In The Listed Order, To Display SPDS Radiological Screens.

1.1.1 DEPRESS the UNIT MASTER MENU Key _____

1.1.2 DEPRESS and hold the "SHIFT" key, while depressing the number 5 key. (Radiation Monitor Screen 1 will be displayed. This screen (Radiation Monitor Screen 1 will be displayed. This screen consists of instantaneous values for the RMS monitors listed below). _____

- R46A-E Main Steam Line Mon
- R44A/B Containment Post LOCA Rad Mon
  R11A Containment Particulate
- R12A Containment Noble Gas
- R12B Containment Iodine
- R44A/B Integ Dose Containment Post LOCA Rad Mon

1.1.3 DEPRESS and hold the "SHIFT" key, while depressing the number 2 key. (Radiation Monitor Screen 2 will be displayed. This screen consists of RMS instantaneous monitor values listed below). _____

- R45B Plant Vent Accident Mon (Medium Range Noble Gas)
- R45C Plant Vent Accident Mon (High Range Noble Gas)
- R16 Plant Vent Gas Eff
- R41A Low Range Noble Gas
- R41B Mid Range Noble Gas
- R41C High Range Noble Gas
- R43 Aux Building Roof Mon
- Unit 1 or 2 Noble Gas Release Rate
- Combined Noble Gas Release Rate

ATTACHMENT 7

Page 2 of 4

1.1.4 DEPRESS and hold the "SHIFT" key, while depressing the number 3 key. (Radiation Monitor Screen 3 will be displayed. This screen consists of RMS 15 minute average monitor values listed below). _____

- R46A-E Main Steam Line Mon
- R44A/B Containment Post LOCA Rad Mon
- R11A Containment Particulate
- R12A Containment Noble Gas
- R12B Containment Iodine

1.1.5 DEPRESS and hold the "SHIFT" key, while depressing the number 4 key. (Radiation Monitor Screen 4 will be displayed. This screen consists of RMS 15 minute average monitor values listed below). _____

- Plant Vent Airflow to Atmosphere (Plant Vent Flow Rate)
- R45B Plant Vent Accident Mon (Medium Range Noble Gas)
- R45C Plant Vent Accident Mon (High Range Noble Gas)
- R16 Plant Vent Gas Eff
- R41A Low Range Noble Gas
- R41B Mid Range Noble Gas
- R41C High Range Noble Gas
- R43 Aux Building Roof Mon

1.1.6 RECORD RMS values on Log 4, SPDS RMS Log. _____

2.0 SALEM 1 & 2 SPDS RADIOLOGICAL SCREEN TRENDING INSTRUCTIONS

2.1 Perform The Steps Listed Below In The Listed Order, To Trend SPDS Radiological Monitors.

2.1.1 DISPLAY the screen that lists the monitor you want to trend. _____

2.1.2 DEPRESS the "DATA ENTRY FORWARD" key to move the cursor to the radiation monitor that is to be trended. _____

2.1.3 DEPRESS the "TREND" key. _____

2.1.4 DEPRESS the "Page Down" key to display the trending of the monitor. _____

2.1.5 DEPRESS the "Page Up" key to return to Radiation Monitor Screen 1. _____

ATTACHMENT 7

Page 3 of 4

3.0 **RML SCREEN INSTRUCTIONS**

DEPRESS The RML Key To Display The Dome Screen. _____

4.0 **RML SCREEN INSTRUCTIONS**

DEPRESS The RM Key To Display Any Abnormal Rleases In Progress. _____

5.0 **INSTRUCTIONS FOR CHANGING UNIT DISPLAYED ON SPDS**

5.1 **Perform The Following to Select Salem Unit 1 On All 4 SPDS Monitors:**

5.1.1 DEPRESS the RCL key located on the monitor switch. _____

5.1.2 ENTER the number 1. _____

5.1.3 DEPRESS the ENT key. _____

5.1.4 DEPRESS the ENT key. _____

5.2 **Perform The Following to Select Salem Unit 2 On All 4 SPDS Monitors:**

5.2.1 DEPRESS the RCL key located on the monitor switch. _____

5.2.2 ENTER the number 2. _____

5.2.3 DEPRESS the ENT key. _____

5.2.4 DEPRESS the ENT key. _____

5.3 **Perform The Following to Select Hope Creek On All 4 SPDS Monitors:**

5.3.1 DEPRESS the RCL key located on the monitor switch. _____

5.3.2 ENTER the number 3. _____

5.3.3 DEPRESS the ENT key. _____

5.3.4 DEPRESS the ENT key. _____

5.4 **Perform The Following to Select Different Units On SPDS Monitors:**

5.4.1 DEPRESS the CON key located on the monitor switch. _____

ATTACHMENT 7

Page 4 of 4

5.4.2 ENTER a number to select appropriate Unit as shown below:

- Number 1 for Salem Unit 1. _____
- Number 2 for Salem Unit 2. _____
- Number 3 for Hope Creek. _____

5.4.3 DEPRESS the ENT key. _____

5.4.4 ENTER a number to select appropriate monitor as shown below: _____

- Number 1 for the Dose Assessment monitor. _____
- Number 2 for the Site Support Staff monitor. _____
- Number 3 for the EP Coordinator Monitor _____
- Number 4 for the NJ Bureau of Nuclear Engineering monitor. _____

5.4.5 Press the ENT key two times. _____

FORM – 1

Page 1 of 1

EOF DOSIMETRY LOG

NAME	SRD NUMBER	SOCIAL SECURITY NUMBER	ISSUED DATE	RTN DATE	INTIAL VALUE (mRem)	END VALUE (mRem)	TOTAL DOSE (mRem)

FORM – 2

Page 1 of 1

TLD ISSUE LOG

Name_____

Date_____

TLD Number_____ Badge Number_____

To the best of my knowledge, my current annual exposure is _____mrem.

Signature_____

Date_____

****
****

Name_____

Date_____

TLD Number_____ Badge Number_____

To the best of my knowledge, my current annual exposure is _____mrem.

Signature_____

Date_____

****
****

Name_____

Date_____

TLD Number_____ Badge Number_____

To the best of my knowledge, my current annual exposure is _____mrem.

Signature_____

Date_____

FORM – 3

Page 1 of 1

EOF HABITABILITY LOG

DATE:

LOCATION	TIME	DOSE RATE (mR/hr)	CONTAMINATION (CPM)	INITIALS

FORM – 4

Page 1 of 1

SPDS RMS LOG

Date/Time: ____-____-____/____:____ Salem Unit ____

Location on SPDS	Monitor Number	Description of Monitor	Value of Monitor	Units
Screen 1/3	R46A	Main Steam Line Mon	_____	mR/hr
Screen 1/3	R46B	Main Steam Line Mon	_____	mR/hr
Screen 1/3	R46C	Main Steam Line Mon	_____	mR/hr
Screen 1/3	R46D	Main Steam Line Mon	_____	mR/hr
Screen 1/3	R46E	Main Steam Line Mon	_____	mR/hr
Screen 1/3	R44A	CNTMT Post LCOA Mon	_____	R/hr
Screen 1/3	R44B	CNTMT Post LOCA Mon	_____	R/hr
Screen 1/3	R11A	CNTMT Particulate Mon	_____	cpm
Screen 1/3	R12A	CNTMT Noble Gas Mon	_____	cpm
Screen 1/3	R12B	CNTMT Iodine Mon	_____	cpm
Screen 4	R16	Plant Vent Gas Mon	_____	cpm
Screen 2/4	R41A	Low Range Noble Gas Mon	_____	uCi/cc
Screen 2/4	R41B	Mid Range Noble Gas Mon	_____	uCi/cc
Screen 2/4	R41C	High Range Noble Gas Mon	_____	uCi/cc
Screen 2/4	R45B	Plant Vent Accident Mon (Min Range Noble Gas Back-up)	_____	uCi/cc
Screen 2/4	R45C	Plant Vent Accident Mon (High Range Noble Gas Back-up)	_____	uCi/cc

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NC.EP-EP.ZZ-0602 (Q) - REV. 01

EOF RADIOLOGICAL DOSE ASSESSMENT

USE CATEGORY: II

REVISION SUMMARY:

1. Deleted Attachment 7, Procedure Completion Sign-off Sheet. This attachment is not required by NAP-1, causes confusion, and adds no value to the procedure.
2. Changed Technical Specification to Offsite Dose Calculation Manual (ODCM)/Federal Limits wording in the note found after step 5.1.1. This used to be in Technical Specifications, but was recently moved to the ODCM.
3. Placed page 1 of Attachment 3 permanently into Word. No change was made to the technical information in the flow chart.
4. Added a note to Attachment 4, Midas Report Guidance, explaining that this attachment is only a guidance and the RSM may ask for more or less reports.
5. This revision satisfies the requirement for a biennial review.

IMPLEMENTATION REQUIREMENTS

This procedure is effective for use upon issue.

5-24-01

APPROVED: _____ EP Manager — 5/9/01 Date

APPROVED: N/A Vice President – Operations — N/A Date

EOF RADIOLOGICAL DOSE ASSESSMENT

TABLE OF CONTENTS

1.0 PURPOSE

Provide direction to EOF Radiological Dose Assessment staff for proper performance of their duties and responsibilities.

2.0 PREREQUISITES

2.1 Prerequisites To Be Followed Prior To Implementing This Procedure

2.1.1 Implement this procedure:

- At the discretion of the ERM.
- Upon staffing of the EOF.

2.1.2 Personnel who implement this procedure shall be trained and qualified IAW the Emergency Plan.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precaution and Limitations To Be Followed Prior To Implementing This Procedure

It is recommended that initials be used in the place keeping sign-offs, instead of checkmarks, if more than one person may implement this procedure.

4.0 EQUIPMENT REQUIRED

As provided in the EOF.

5.0 PROCEDURE

5.1 RADIOLOGICAL ASSESSMENT DUTIES

5.1.1 OBTAIN a briefing on current radiological conditions and the emergency status from the Radiological Support Manager (RSM) or RSM designee. The following information should be provided during the briefing.

NOTE

A radiological release is in progress when the Noble Gas (NG) Offsite Dose Calculation Manual (ODCM)/Federal Limits are met or exceeded.
Hope Creek ODCM Limits = 1.20E+04 uCi/sec.
Salem NG ODCM Limits = 2.42E+05 uCi/sec.

A. IS a radiological release in progress? _____

B. IF **YES**, THEN what magnitude is the radiological release _____ uCi/Sec and the time it started _____? _____

C. HAVE any Protective Action Recommendations (PARs) been made or are about to be made? _____

D. IF **YES**, THEN what PAR(s) were or will be made? _____

E. HAVE any Fission Product Barriers (RCS, Fuel, Containment) been breached? _____

F. IF **YES**, THEN which barriers have been breached? _____

G. WHAT is the Emergency classification and the basis? _____

5.1.2 IF a log book is being kept, THEN RECORD any pertinent information or data in the EOF Dose Assessment Log Book, as time permits. _____

NOTE

A blank Station Status Checklist (SSCL) may be obtained from ECG Attachment 8.

5.1.3 IF automatic data acquisition is operational, THEN go to Step 5.1.7 and: _____

A. IMPLEMENT NC.EP-EP.ZZ-0309(Q)/EPIP 309S(H), Dose Assessment. _____

B. PERFORM dose assessment in automatic mode. _____

C. OBTAIN a SSCL. _____

5.1.4 IF automatic data acquisition is **NOT** operational, THEN: _____

A. IMPLEMENT NC.EP-EP.ZZ-0309(Q)/EPIP 309S(H), Dose Assessment. _____

B. PERFORM dose assessment in manual mode. _____

C. OBTAIN a SSCL. _____

5.1.5 OBTAIN radiological data to perform manual dose assessment from one of the following sources:

- **(HOPE CREEK ONLY)** VAX LA120, IAW Attachment 1 of this procedure. _____
- **(HOPE CREEK ONLY)** A Control Point FAX of RMS Status Sheet. _____
- **(SALEM 1 & 2 ONLY)** A Control Room FAX. of Radiological Assessment Data Sheet. _____
- **(SALEM 1 & 2 ONLY)** SPDS Radiation Monitoring Screens IAW Attachment 2 of this procedure, Instructions For Salem SPDS Displays. _____

5.1.6 OBTAIN meteorological data to perform manual dose assessment from one of the following sources: _____

- **(HOPE CREEK ONLY)** VAX LA120, IAW Attachment 1 of this procedure. _____
- **(HOPE CREEK ONLY)** A Control Point FAX. _____
- **(SALEM 1 & 2 ONLY)** A Control Room FAX. _____
- **(SALEM 1 & 2 ONLY)** SPDS Radiation Monitoring Screens IAW Attachment 2 of this procedure, Instructions For Salem SPDS Displays. _____
- **(HOPE CREEK, SALEM 1 & 2)** If the meteorological data can **NOT** be obtained from any other source, call the National Weather Service at 609-261-6604 or 609-261-6602. _____

5.1.7 IF the SSCL indicates a radiological release is in progress, THEN implement Attachment 3, Radiological Based PAR and PAR Worksheet, to determine if a PAR is necessary. _____

A. IF necessary, THEN determine the PAR. _____

B. REVIEW the SSCL and PAR with the RSM. _____

C. INFORM the RSM that the EOF is ready to assume the SSCL/Dose Assessment duties. _____

5.1.8 IF the SSCL indicates a radiological release is **NOT** in progress, THEN:

A. REVIEW the SSCL with the RSM. _____

B. INFORM the RSM that the EOF is ready to assume the SSCL/Dose Assessment duties. _____

5.1.9 PRODUCE the SSCL every 30 minutes and present it to the RSM under any of the following conditions: _____

- IF a radiological release is in progress. _____
- IF the EOF is activated. _____
- IF asked to do so by the RSM. _____

5.1.10 DETERMINE which MIDAS reports to print out and present to the RSM, IAW Attachment 4, MIDAS Report Guidance. _____

5.1.11 TRACK and trend the affected Plant's radiological conditions by monitoring the RMS. Refer to Step 5.1.5 for methods to obtain RMS data. _____

5.1.12 IF any of the following conditions occur to RMS values, THEN notify the RSM immediately, followed by the State Liaison(s): _____

- **(HOPE CREEK ONLY)** SSCL Noble Gas or Noble Gas value on the VAX LA120 for North Plant Vent (NPV), South Plant Vent (SPV), Filtration Recirculation Ventilation System (FRVS), and/or Hardened Torus Vent (HTV) $\geq$ 1.20E+04 uCi/Sec. _____
- **(SALEM 1 & 2 ONLY)** SSCL Noble Gas or Noble Gas value on SPDS $\geq$ 2.42E+05 uCi/Sec. _____

NOTE

Refer to the Salem RMS Manuals or HC.RP-AR.SP-0001 (Q) or the Hope Creek Radiation Protection Radiation Monitoring System Alarm Response Procedure, for additional information than what is contained in Attachment 5, RMS Quick Reference for Salem or Hope Creek RMS.

5.1.13 REVIEW Attachment 5, RMS Quick Reference, for information concerning effluent, some area radiation monitors (ARM), Containment and Drywell ARMs. _____

5.1.14 IF a radiological release is in progress, THEN calculate a Noble Gas to Iodine Correction Factor (ICF), IAW Attachment 6, Iodine Correction Factor, when possible. _____

5.1.15 IF "WHAT IF" dose assessment scenarios are necessary, THEN implement NC.EP-EP.ZZ-0309(Q), Dose Assessment. _____

6.0 RECORDS

Return completed procedure and any information or data thought to be pertinent by the dose assessor, to the EP Manager.

7.0 REFERENCES

7.1 References

None

7.2 Cross References

7.2.1 NC.EP-EP.ZZ-0309(Q), Dose Assessment

7.2.2 HC.RP-AR.SP-0001(Q). Salem RMS Manuals

7.2.3 NC.EP-EP.ZZ-0601(Q), Radiological Dose Assessment

7.2.4 NC.EP-AP.ZZ-1014(Q), Emergency Preparedness Classroom Training Administration

7.2.5 PSEG Nuclear Emergency Plan

ATTACHMENT 1

OPERATION OF THE VAX LA120 TERMINAL

1.0 **Meteorological Data**

1.1 **Perform The Following to Obtain Current 15 Minute Average Meteorological Data:**

1.1.1 DEPRESS the RETURN key. (USERNAME should be displayed). _____

1.1.2 ENTER MET and depress the RETURN key _____

> **NOTE**
>
> The most current meteorological data should be printed out followed by the Main Meteorological Menu. If no other keys are depressed, the current 15 minute average data will be printed out every 15 minutes

1.1.3 ENTER Option 3 (Disable Automatic Display of MET Data Every 15 minutes) and depress the RETURN key to STOP the VAX LA120 from printing out meteorological data every 15 minutes. _____

1.1.4 ENTER Option 1 (Display Current Meteorological Data) and depress the RETURN key to receive the current 15 meteorological data print out and assume having the current 15 minute MET data printout automatically. _____

1.2 **Perform The Following Steps to Obtain Archived Meteorological Data:**

1.2.1 DEPRESS the RETURN key. (USERNAME should be displayed) _____

1.2.2 ENTER MET and depress the RETURN key. (The most current meteorological data should be printed out followed by the Main Meteorological Menu). _____

1.2.3 ENTER Option 2 (Display Meteorological Data From Data Base) and depress the RETURN key. (Current system Date and Time will be displayed). _____

1.2.4 IF this is the data you want, THEN depress the RETURN key. (Your option will be printed out). _____

1.2.5 IF you want data from another date and time, THEN go to Step 1.2.6. _____

ATTACHMENT 1

1.2.6 ENTER start date and time as shown below and depress the RETURN key. (For December 27, 1989 at 0130 enter 27-DEC-1989 "depress the space bar once" and enter 01:30). _____

1.2.7 ENTER "Y" if the information is correct or "N" if the information is not correct and reenter it as shown in Step 1.2.6. _____

1.2.8 ENTER the end date and time as shown below and depress the RETURN key. (For December 28, 1989 at 0230 enter 28-DEC-1989 "depress the space bar once" and enter 02:30). _____

1.2.9 ENTER "Y" if the information is correct or "N" if the information is not correct and re-enter it as shown in Step 1.2.6. _____

2.0 RMS AND MET DATA (FOR HOPE CREEK ONLY)

2.1 Perform The Following Steps to Obtain Current Instantaneous RMS and MET Data:

2.1.1 DEPRESS the RETURN key. (USERNAME should be displayed). _____

2.1.2 ENTER the letters EOF and depress the RETURN key. (A prompt should be displayed asking for PASSWORD). _____

2.1.3 ENTER EOFUSER and depress the RETURN key. (The EOF Plant Menu should be displayed.) _____

2.1.4 SELECT Option 1 for Hope Creek. _____

2.1.5 DEPRESS the RETURN key. (The EOF Report Options Menu will be displayed). _____

2.1.6 ENTER Option 1 (Current RMS Status) and depress the RETURN key. (The most current instantaneous RMS and 15 minute MET data will be printed out.) _____

2.2 Perform The Following Steps to Obtain 15 Minute Average RMS Data:

2.2.1 DEPRESS the RETURN key. (USERNAME should be displayed). _____

2.2.2 ENTER EOF and depress the RETURN key. (A prompt should be displayed asking for PASSWORD). _____

2.2.3 ENTER EOFUSER and depress the RETURN key. (The EOF Plant Menu should be displayed). _____

ATTACHMENT 1

2.2.4 SELECT option 1 for Hope Creek. _____

2.2.5 DEPRESS the RETURN key. (The EOF Report Options Menu should be displayed). _____

2.2.6 SELECT and enter option number 6 (15 Minute Historical Data). (Current system date and time should be displayed. A prompt should be displayed for start date and time) _____

2.2.7 IF this is the data you want, THEN depress the RETURN key. (Your option will be printed out). _____

2.2.8 IF you want data from another date and time, THEN go to Step 2.2.9.DEPRESS the RETURN key for 15 minute average RMS and MET data. (Your selection will be printed). _____

2.2.9 ENTER start date and time as shown below and depress the RETURN key. (For December 27, 1989 at 0130 enter 27-DEC-1989 "depress the space bar once" and enter 01:30). _____

2.2.10 ENTER "Y" if the information is correct or "N" if the information is not correct and reenter it as shown in Step 1.2.6. _____

2.2.11 ENTER the end date and time as shown below and depress the RETURN key. (For December 28, 1989 at 0230 enter 28-DEC-1989 "depress the space bar once" and enter 02:30). _____

2.2.12 ENTER "Y" if the information is correct or "N" if the information is not correct and re-enter it as shown in Step 2.2.9. _____

ATTACHMENT 2

Page 1 of 4

INSTRUCTIONS FOR SALEM SPDS DISPLAYS

NOTE

Values in Red with "HH" displayed are in HIGH HIGH ALARM.
Values in YELLOW with "H" displayed are in HIGH ALARM.

1.0 SALEM 1 & 2 SPDS RADIOLOGICAL SCREEN INSTRUCTIONS

1.1 Follow The Steps Below In The Listed Order, To Display SPDS Radiological Screens.

1.1.1 DEPRESS the "UNIT MASTER MENU" key. _____

1.1.2 DEPRESS and hold the "SHIFT" key, while depressing the number 5 key. (Radiation Monitor Screen 1 will be displayed. This screen (Radiation Monitor Screen 1 will be displayed. This screen consists of instantaneous values for the RMS monitors listed below). _____

- R46A-E Main Steam Line Mon
- R44A/B Containment Post LOCA Rad Mon
- R44A/B Integ Dose Containment Post LOCA Rad Mon
- R11A Containment Particulate
- R12A Containment Noble Gas
- R12B Containment Iodine

1.1.3 DEPRESS and hold the "SHIFT" key, while depressing the number 2 key. (Radiation Monitor Screen 2 will be displayed. This screen consists of RMS instantaneous monitor values listed below). _____

- R45B Plant Vent Accident Mon (Medium Range Noble Gas)
- R45C Plant Vent Accident Mon (High Range Noble Gas)
- R16 Plant Vent Gas Eff
- R41A Low Range Noble Gas
- R41B Mid Range Noble Gas
- R41C High Range Noble Gas
- R43 Aux Building Roof Mon
- Noble Gas Release Rate
- Combined Noble Gas Release Rate

1.1.4 DEPRESS and hold the "SHIFT" key, while depressing the number 3 key. (Radiation Monitor Screen 3 will be displayed. This screen consists of RMS 15 minute average monitor values listed below). _____

- R46A-E Main Steam Line Mon
- R44A/B Containment Post LOCA Rad Mon
- R44A/B Integ Dose Containment Post LOCA Rad Mon
- R11A Containment Particulate
- R12A Containment Noble Gas
- R12B Containment Iodine

1.1.5 DEPRESS and hold the "SHIFT" key, while depressing the number 4 key. (Radiation Monitor Screen 4 will be displayed. This screen consists of RMS 15 minute average monitor values listed below). _____

- R45B Plant Vent Accident Mon (Medium Range Noble Gas)
- R45C Plant Vent Accident Mon (High Range Noble Gas)
- R16 Plant Vent Gas Eff
- R41A Low Range Noble Gas
- R41B Mid Range Noble Gas
- R41C High Range Noble Gas

1.1.6 RECORD RMS values on 4, Form 1-1, SPDS RMS Log. _____

2.0 SALEM 1 & 2 SPDS RADIOLOGICAL SCREEN TRENDING INSTRUCTIONS

2.1 Perform The Steps Listed Below In The Listed Order, To Trend SPDS Radiological Monitors.

2.1.1 DISPLAY the screen that lists the monitor you want to trend. _____

2.1.2 DEPRESS the "DATA ENTRY FORWARD" key to move the cursor to the radiation monitor that is to be trended. _____

2.1.3 DEPRESS the "TREND" key. _____

2.1.4 DEPRESS the "Page Down" key to display the trending of the monitor. _____

2.1.5 DEPRESS the "Page Up" key to return to Radiation Monitor Screen 1. _____

3.0 RML SCREEN INSTRUCTIONS

DEPRESS the RML key To display the dome screen. _____

ATTACHMENT 2

Page 3 of 4

4.0 **RM SCREEN INSTRUCTIONS**

DEPRESS the RM key to display any abnormal radiological releases in progress. _____

5.0 **INSTRUCTIONS FOR CHANGING UNIT DISPALYED ON SPDS**

5.1 **Perfprm The Following to Select Salem Unit 1 On All 4 SPDS Monitors:**

5.1.1 DEPRESS the RCL key located on the monitor switch. _____

5.1.2 ENTER the number 1. _____

5.1.3 DEPRESS the ENT key. _____

5.1.4 DEPRESS the ENT key. _____

5.2 **Perform The Following to Select Salem Unit 2 On All 4 SPDS Monitors:**

5.2.1 DEPRESS the RCL key located on the monitor switch. _____

5.2.2 ENTER the number 2. _____

5.2.3 DEPRESS the ENT key. _____

5.2.4 DEPRESS the ENT key. _____

5.3 **Perform The Following to Select Hope Creek On All 4 SPDS Monitors:**

5.3.1 DEPRESS the RCL key located on the monitor switch. _____

5.3.2 ENTER the number 3. _____

5.3.3 DEPRESS the ENT key. _____

5.3.4 DEPRESS the ENT key. _____

5.4 **Perform The Following to Select Different Units On SPDS Monitors:**

5.4.1 DEPRESS the CON key located on the monitor switch. _____

5.4.2 ENTER a number to select appropriate Unit as shown below:

- Number 1 for Salem Unit 1. _____

ATTACHMENT 2

Page 4 of 4

- Number 2 for Salem Unit 2. _____
- Number 3 for Hope Creek. _____

5.4.3 DEPRESS the ENT key. _____

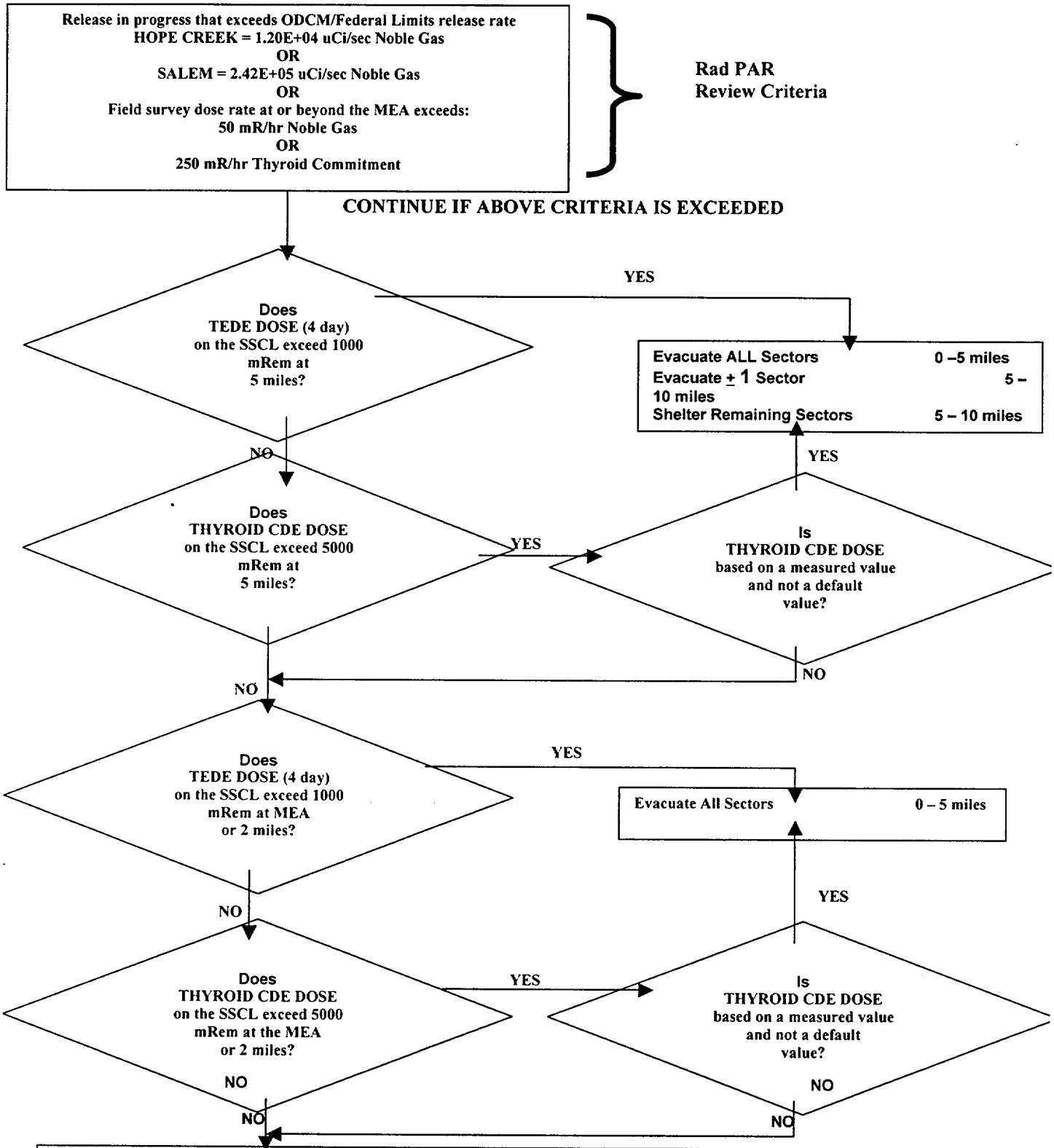
5.4.4 ENTER a number to select appropriate monitor as shown below: _____

- Number 1 for the Dose Assessment monitor. _____
- Number 2 for the Site Support Staff monitor. _____
- Number 3 for the EP Coordinator Monitor _____
- Number 4 for the NJ Bureau of Nuclear Engineering monitor. _____

5.4.5 Press the ENT key two times. _____

ATTACHMENT 3
Page 1 OF 2
RADIOLOGICAL BASED PROTECTIVE ACTION RECOMMENDATION FLOW CHART AND WORKSHEET

Initial Conditions: If Rad PAR review criteria is not exceeded, Rad PAR is not required.

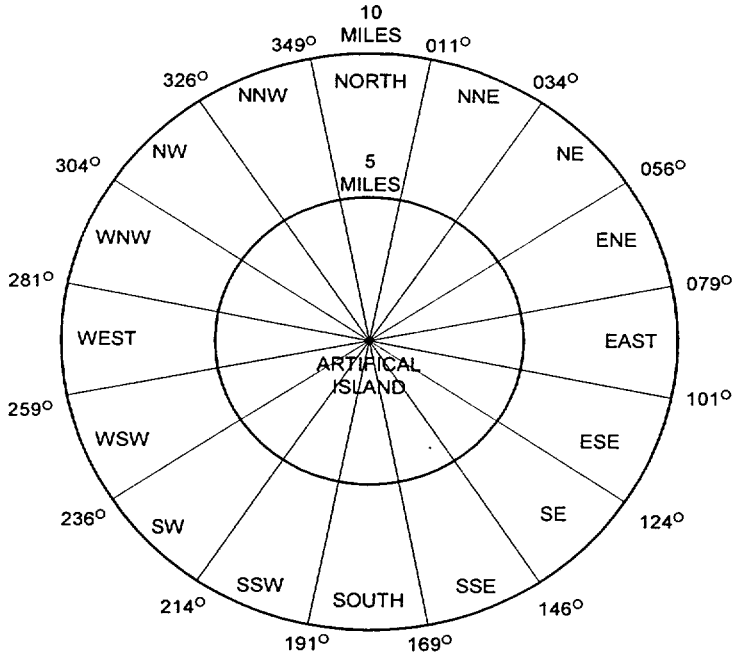


ATTACHMENT 3

Page 2 of 2

WIND DIRECTION FROM DEGREES	COMPASS		PAR AFFECTED SECTORS DOWNWIND ±1 SECTORS
349 - 011	N	⇒	SSE - S - SSW
011 - 034	NNE	⇒	S - SSW - SW
034 - 056	NE	⇒	SSW - SW - WSW
056 - 079	ENE	⇒	SW - WSW - W
079 - 101	E	⇒	WSW - W - WNW
101 - 124	ESE	⇒	W - WNW - NW
124 - 146	SE	⇒	WNW - NW - NNW
146 - 169	SSE	⇒	NW - NNW - N
169 - 191	S	⇒	NNW - N - NNE
191 - 214	SSW	⇒	N - NNE - NE
214 - 236	SW	⇒	NNE - NE - ENE
236 - 259	WSW	⇒	NE - ENE - E
259 - 281	W	⇒	ENE - E - ESE
281 - 304	WNW	⇒	E - ESE - SE
304 - 326	NW	⇒	ESE - SE - SSE
326 - 349	NNW	⇒	SE - SSE - S

NOTE: CONSIDER ADDING A SECTOR TO THE PAR IF THE WIND DIRECTION (FROM) IS WITHIN ± 3° OF A SECTOR DIVIDING LINE.



ATTACHMENT 4

MIDAS REPORT GUIDANCE

NOTE
This Attachment is to be used only as a guidance. Depending on the RSM's requests, more or less reports may be asked for.

1.0 **NO RADIOLOGICAL RELEASE IN PROGRESS**

1.1. **Print Out The Following Plots**

- TEDE 4-DAY DOSE PLOT _____
- As requested by the RSM. _____

2.0 **RADIOLOGICAL RELEASE IN PROGRESS**

2.1 **Print Out The Following Plots And Prints.** _____

2.1.1 MIDAS TEDE 4-DAY PLOT (FOR LEADS MEETINGS). _____

2.1.2 MIDAS TEDE DOSE RATE PRINT _____

2.1.3 MIDAS THYROID CDE DOSE RATE PRINT _____

2.1.4 MIDAS PROJECTED DOSE SUMMARY PRINT _____

2.1.5 MIDAS MET AND RAD SUMMARY PRINT _____

ATTACHMENT 5

RMS QUICK REFERENCE

1.0 **Salem RMS (Unit 1 and 2)**

R2 is an Area Radiation Monitor (ARM) located in Containment on the 130' elevation.
Ranges: 1E-01 to 1E+04 mR/hr.

R7 is an ARM located in Containment on the 100' elevation, adjacent to the Seal Table Room.
Ranges: 1E-01 to 1E+04 mR/hr.

R10A is an ARM located in Containment on the 100' elevation next to the personnel airlock.
Ranges: 1E-01 to 1E+04 mR/hr.

R10B is an (ARM) located in Containment on the 130' elevation next to the personnel airlock.
Ranges: 1E-01 to 1E+04 mR/hr.

R16 Plant Vent Stack is located in the Plant Vent duct at 194' elevation and monitors what is going out the Plant Vent stack.
Ranges: 1E+01 to 1E+06 CPM

R34 is an ARM located in the Mechanical Penetration across from the 100' elevation Containment personnel Airlock.
Ranges: 1E-01 to 1E+06 mR/hr.

R44A is a High Range or Accident Area Radiation Monitor (HARM) located in Containment on the 130' elevation close to the personnel airlock.
Ranges: 1E+00 to 1E+07 R/hr.

R44B is a (HARM) located in Containment on the 100' elevation between the R10A and R7 ARMs.
Ranges: 1E+00 to 1E+07 R/hr.

R47 is an ARM located in the 78' Electrical Penetration. The PASS lines are located in the overhead. The skid and PASS lines may be the source of any increase in this area. This Penetration has its own ventilation flow path and will vent directly into the atmosphere. There is a potential for an unmonitored release from this Penetration.
Ranges: 1E-01 to 1E+07 mR/hr

ATTACHMENT 5

NOTE

- All emergency Grab Samples (Noble Gas, Iodine and Particulate) should be taken from the R45 Skid located in the R45 Shed.
- Only one of the following Effluent Monitors (R41A, R41B, R41C,R45B or R45C) readings should be used in MIDAS Manual Mode.

R41A is the Low Range Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.
Ranges: 1E-07 to 1E-01 uCi/cc

R41B is the Mid Range Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.
Ranges: 1E-04 to 1E-02 uCi/cc

R41C is the High Range Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.
Ranges: 1E-01 to 1E+05 uCi/cc

R41D is the Effluent Noble Gas Monitor and is located on the R41 Sample Skid on the 122' elevation of the Auxiliary Building next to the door to the stairs.
Ranges: 0E+00 to 1E+13 uCi/Sec
(The R41D should not be used in MIDAS to perform manual dose assessment calculations)

R45B is the "Backup" Mid Range Noble Gas Monitor and is located in the R45 Shed behind the Fuel Handling Building. This monitor should not be used unless the R41 monitors are inoperable.
Ranges: 1E-03 uCi/cc to 1E+01 uCi/cc

R45C is the "Backup" High Range Noble Gas Monitors and is located in the R45 Shed behind the Fuel Handling Building. This monitor should not be used unless the R41 monitors are inoperable.
Ranges: 1E-01 uCi/cc to 1E+05 uCi/cc

2.0 Hope Creek

NOTE

All ARM's in the Reactor Building have maximum ranges of 1.00E+04 mR/hr, except for the Inner Tip Room Monitor (9RX699). The Inner Tip Room Monitor's maximum range is 1.00E+07 mR/hr.

DAPA A and DAPA B (9RX635 and 9RX636) are high range ARMs in the Drywell. DAPA A is approximately twice as high as DAPA B under normal operating conditions. During a LOCA in the Drywell the two monitors should start to trend closer together due to the atmospheric conditions in the Drywell affecting both monitors equally. Increases on both of these monitors while DAPA A's reading stays about twice of what DAPA B is reading, would be an indication of fuel damage.
Ranges: 1.00E+00 to 1.00E+08 R/hr.

Tip Room Inner ARM (9RX699) is located on 102' elevation of the Reactor Building inside the Tip Room. This monitor has the highest range of any ARM in the Reactor Building and could give an idea of what the dose rates in the Reactor Building are after the other ARMs peg out high.
Ranges: 1.00E+00 to 1.00E+07 mR/hr

Main Steam Line A - D monitors (9RX509-512) are four ARMs located in the ceiling of the Main Steam Tunnel. Increases in these monitors would be an indication of fuel damage. These monitors could increase due to shine from the Reactor Building, after a radiological release.
Ranges: 1.00E+00 to 1.00E+06 mR/hr

Safeguard Instrument Room Monitor (9RX704) is an ARM located on 77' elevation of the Reactor Building. An increase on this monitor when the reactor SCRAMs with fuel damage could be due to shine from the Torus.
Ranges: 1.00E-01 to 1.00E+04 mR/hr

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FRVS Effluent monitor (9RX680) monitors what is going out the FRVS Plant Vent. Under normal operating conditions Reactor Building ventilation would vent through the South Plant Vent. Under accident conditions or when manually initiated, Reactor Building Ventilation isolates and the Reactor Building will vent through the FRVS. FRVS is always a ground release. Values ≥ 1.20E+04 uCi/Sec would be an indication that a radiological release is in progress.
Ranges: 1.00E+00 to 1.00E+12 uCi/Sec

North Plant Vent Effluent (NPV) monitor (9RX590) monitors Offgas and the chemistry lab fume hoods. NPV could be a ground or elevated release depending on the time of year and wind speed. Values ≥ 1.20E+04 uCi/Sec would be an indication that a radiological release is in progress.
Ranges: 1.00E+00 to 1.00E+12 uCi/Sec

South Plant Vent Effluent (SPV) monitor (9RX580) monitors Service Radwaste Building, Turbine Building and the Reactor Building (if FRVS hasn't been initiated). Values ≥ 1.20E+04 uCi/Sec would be an indication that a radiological release is in progress.
Ranges: 1.00E+00 to 1.00E+12 uCi/Sec

Hardened Torus Vent Effluent (HTV) monitor (9RX518) would be used to vent the Drywell to relieve pressure. The path it would take would be through the Torus and take advantage of the scrubbing properties of the Torus water, but the release would considered to be an unfiltered release. Iodines and particulates could be a major concern. Control Room operators would have to open a valve to use this release path. Sampling from the PASS Torus Gas Space should be performed to provide information as to what is being released. Values ≥ 1.20E+04 uCi/Sec would be an indication that a radiological release is in progress.
Ranges: 0.00E+00 to 2.09E+12 uCi/Sec

ATTACHMENT 6

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IODINE CORRECTION FACTOR

1.0 IODINE CORRECTION FACTOR CALCULATION USING PLANT VENT DATA

1.1 Perform The Following To Obtain An Iodine Correction Factor:

1.1.1 OBTAIN the Plant vent Iodine 131 data in uCi/cc from the Radiation Protection Supervisor-Offsite (RPS-Offsite) located in the TSC. _____

1.1.2 OBTAIN the Plant Vent RMS Noble Gas value in uCi/cc from the appropriate effluent monitor that the radiological release is being discharged from. _____

1.1.3 DIVIDE the Iodine value by the Plant Vent Noble Gas value This will produce the Iodine Correction Factor (ICF) _____

$$\frac{\text{Iodine 131 (uCi/cc)}}{\text{Plant Vent RMS Noble Gas Value (uCi/cc)}} = \text{ICF}$$

1.1.4 MULTIPLY most current RMS Noble Gas monitor value by the ICF. The product will be the Corrected Iodine Value. _____

1.1.5 OBTAIN the Corrected Iodine Value at least every 30 minutes by multiplying the most current Plant Vent RMS Noble Gas monitor value by the ICF. _____

1.1.6 IMPLEMENT NC.EP-EP.ZZ-0309(Q)/EPIP 309S(H), Dose Assessment, Attachment 3, Manual Dose Assessment, and follow appropriate steps. _____

1.1.7 INPUT the Corrected Iodine Value into the appropriate RMS – DI location on the MIDAS spread sheet (i.e., FRVS - DI, 2R45B - DI, etc.). _____

ATTACHMENT 6

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NOTE
Use the current Plant Vent flow rate for the –DI flow rate.

1.1.8 UPDATE the ICF whenever more recent Plant Vent Iodine 131 is available. _____

2.0 IODINE CORRECTION FACTOR CALCULATION USING FIELD TEAM DOSE PROJECTION DATA

NOTE

- The following method will only work if the Field Monitoring Team data is collected at the MIDAS projected center line at a distance of 2, 5, or 10 miles.
- The primary methodology of obtaining the ICF should be performed IAW Section 1.0 of this Attachment

2.1 Perform The Following To Obtain An ICF From Field Monitoring Data:

2.1.1 RUN an automatic SSCL. Use the Plant Vent Noble Gas RMS monitor value and current 15 minute MET data if in Manual MIDAS mode. _____

2.1.2 RECORD the Projected Dose Rate of interest (SSCL TEDE DOSE RATE) in Space A., the distance in miles in Space B., and the direction in Space C. _____

A._____(mRem/hour TEDE Rate) B._____(Miles) C._____(Degrees)

ATTACHMENT 6

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2.1.3 RECORD the Projected X/Q of interest (SSCL X/Q) in Space D. _____

D._____

2.1.4 RECORD the Field Team's measured CLOSED WINDOW reading at the location of interest in Space E. _____

E._____ mR/hour

2.1.5 RECORD the Field Team Iodine 131 Sample in uCi/cc in Space F. IAW NC.EP-EP.ZZ-0603(Q), Field Monitoring. _____

F._____ uCi/cc

2.1.6 CALCULATE the Iodine 131 Release Rate as follows and record in Space G.: _____

$$\frac{A}{E} * \frac{1}{D} * F * 1.00E+06 = G.\_\_\_\_\_ \text{ (uCi/Sec)}$$

(1.00E+06 = Conversion Factor from Cubic Meters to cc)

2.1.7 OBTAIN the Noble Gas Release Rate (uCi/Sec) using the same SSCL the TEDE DOSE RATE and X/Q that were obtained from and record in Space H. _____

H._____

2.1.8 DETREMINE the Iodine Correction Factor (ICF) as follows: _____

$$\frac{\text{Iodine Release Rate in uCi/Sec (Space G.)}}{\text{Noble Gas Release Rate in uCi/Sec (Space H.)}} = \text{ICF}$$

2.1.9 FOLLOW the directions in 1.0, Steps 1.1.4 - 1.1.9 of this Attachment for instructions in the proper use of the ICF. _____

FORM - 1

Page 1 of 1

SPDS RMS LOG

Date/Time: ____-____-____/____:____ Salem Unit ____

Location on SPDS	Monitor Number	Description of Monitor	Value of Monitor	Units
Screen 1/3	R46A	Main Steam Line Mon	_____	mR/hr
Screen 1/3	R46B	Main Steam Line Mon	_____	mR/hr
Screen 1/3	R46C	Main Steam Line Mon	_____	mR/hr
Screen 1/3	R46D	Main Steam Line Mon	_____	mR/hr
Screen 1/3	R46E	Main Steam Line Mon	_____	mR/hr
Screen 1/3	R44A	CNTMT Post LOCA Mon	_____	R/hr
Screen 1/3	R44B	CNTMT Post LOCA Mon	_____	R/hr
Screen 1/3	R11A	CNTMT Particulate Mon	_____	cpm
Screen 1/3	R12A	CNTMT Noble Gas Mon	_____	cpm
Screen 1/3	R12B	CNTMT Iodine Mon	_____	cpm
Screen 4	R16	Plant Vent Gas Mon	_____	cpm
Screen 2/4	R41A	Low Range Noble Gas Mon	_____	uCi/cc
Screen 2/4	R41B	Mid Range Noble Gas Mon	_____	uCi/cc
Screen 2/4	R41C	High Range Noble Gas Mon	_____	uCi/cc
Screen 2/4	R45B	Plant Vent Accident Mon (Mid Range Noble Gas Back-up)	_____	uCi/cc
Screen 2/4	R45C	Plant Vent Accident Mon (High Range Noble Gas Back-up)	_____	uCi/cc

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PSEG NUCLEAR LLC

NC.EP-EP.ZZ-0603(Q) – REV. 03

FIELD MONITORING

USE CATEGORY: II

REVISION SUMMARY:

1. Deleted Attachment 11, Procedure Completion Sign-off Sheet. This attachment is not required by NAP-1, causes confusion, and adds no value to the procedure.
2. Added and editorial clarification to steps 1.1.6 and 1.1.7 of Attachment 2.
3. This revision satisfies the requirement for a biennial review.

IMPLEMENTATION REQUIREMENTS

This procedure is effective for use upon issue.

5-24-01

APPROVED: _____ EP Manager — 5/9/01 Date

APPROVED: N/A Vice President - Operations — N/A Date

FIELD MONITORING

TABLE OF CONTENTS

FORMS

1.0. PURPOSE

Provide the EOF Offsite Team Coordinator, the Field Team Communicator, and the Offsite Field Monitoring Team with direction to perform their duties during a declared emergency.

2.0 PREREQUISITES

2.1 Prerequisites to be Followed Prior to Implementation:

Implement this procedure at:

- The discretion of the ERM.
- Upon staffing of the EOF.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precautions and Limitations to be Followed Prior to Implementation:

- Steps listed in this procedure may be performed in the order deemed appropriate for the emergency situations. Only steps applicable to the specific emergency need be performed.
- It is recommended that initials be used in the place keeping sign-offs, instead of checkmarks, if more than one person may implement this procedure.
- Personnel who implement this procedure shall be trained and qualified IAW the Emergency Plan.

4.0 EQUIPMENT / MATERIAL REQUIRED

As provided in the EOF.

5.0 PROCEDURE

5.1 The Offsite Team Coordinator (OTC)

5.1.1 IMPLEMENT Attachment 1, Offsite Team Coordinator Checklist, unless otherwise directed by the Radiological Support Manager (RSM). _____

5.2 **The Field Team Communicator (FTC)**

5.2.1 IMPLEMENT Attachment 4, Field Monitoring Team Log. _____

5.3 **The Offsite Field Monitoring Team(s) (OFMT)**

5.3.1 IMPLEMENT Attachment 8, Field Monitoring Team Responsibilities and Directions. _____

6.0 RECORDS

Return completed procedure and any information or data thought to be pertinent by the dose assessor, to the EP Manager.

7.0 REFERENCES

7.1 **References**

7.1.1 NUREG-0654, Criteria for Preparation and Evaluation of Radiological Emergency Response Plans and Preparedness in Support of Nuclear Power Plants.

7.1.2 NUREG/CR-0314, An Air Sampling System for Evaluating Thyroid Dose Commitment Due to Fission Products Released for Reactor Containments.

7.1.3 Radiological Health Handbook (Revised Edition January 1970)

7.1.4 EPA 400-R-92-001, Manual Of Protective Action Guides And Protective Actions For Nuclear Incidents.

7.2 **Cross References**

7.2.1 NC.EP-EP.ZZ-0308(Q), Personnel/Vehicle Survey & Decontamination

7.2.2 NC.EP-EP.ZZ-0601(Q) Radiological Support Manager and Radiological Assessment Staff Response

7.2.3 NC.EP-EP.ZZ-0602(Q) EOF Radiological Dose Assessment

7.2.4 NC.AP-EP.ZZ-1006(Z) Emergency Preparedness Inventory Radiation Protection

7.2.5 PSEG Nuclear Emergency Plan

ATTACHMENT 1

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OFFSITE TEAM COORDINATOR CHECKLIST

NOTE
The order that these steps are to be performed is at the Offsite Team Coordinator's (OTC) discretion and may be delegated.

Name: _____ / _____ _____ / _____
(PRINT) / (SIGN) DATE / TIME

1.0 **THE OTC**

1.1 **The OTC Should Perform The Following**:

1.1.1 INITIATE an OTC log book _____

1.1.2 ENSURE the RSM is kept informed of all radiological conditions (rad readings 10 times > background or as thought appropriate). _____

1.1.3 DIRECT the Offsite Field Monitoring Team to implement Attachment 8, Field Monitoring Team Responsibilities and directions, if not already dispatched. _____

1.1.4 CONTACT the Radiation Protection Supervisor - Offsite (RPS-Offsite) and ask if the EOF should take over responsibility for the Offsite Field Monitoring Team(s). _____

1.1.5 IF the EOF hasn't been activated and the OTC has taken control, THEN keep the RPS-Offsite informed of the team's location. _____

1.1.6 PERFORM the following, if the Offsite Field Monitoring Team(s) has not been deployed:

A. PROVIDE a briefing to the Offsite Field Monitoring Team IAW Attachment 2, Field Monitoring Team Briefing Form. _____

B. ASSIGN a phonetic alphabet name for Offsite Teams such as Alpha Team. _____

ATTACHMENT 1

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C. ENSURE the Offsite Field Monitoring Teams have implemented Attachment 8, Field Monitoring Team Responsibilities and Directions. _____

1.1.7 ENSURE the Field Team Communicator implements Attachment 4, Field Monitoring Team Log. _____

1.1.8 DIRECT Field Teams to monitoring locations through the Field Team Communicator and provide instructions concerning what type of readings and sampling they should perform. _____

1.1.9 REFER below for instructions and items to consider when assigning locations, type of samples to be taken, and special actions/concerns:

- CONSULT with the States of Delaware and New Jersey to avoid duplication of efforts and avoid traffic jams. _____
- REFER to the MIDAS printouts for projected location of the plume center line. _____
- OBTAIN the CREST printout to determine location where the plume should be. _____
- ASSIGN the Field Teams to locations where it is thought the plume is located using the information gathered from dose projections, CREST printouts, and information gathered from the States of Delaware and New Jersey. _____
- INSTRUCT the Field Monitoring Teams to take dose rates and pull air samples, as appropriate. _____
- REFER to Form - 4, Field Monitoring/CREST Data vs. Projected Data, and log information gathered from the Field Monitoring Team, CREST Data, and SSCL TEDE Rate. _____
- COMPARE the different data points logged on Form-4. _____
- CONSULT with the RSM concerning the data recorded on Form - 4. _____
- PROVIDE iodine sample results to the dose assessment staff using Attachment 7, Conversion Table For Iodine 131. _____

ATTACHMENT 1

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- REQUEST the RSM to authorize use of a boat through the Coast Guard to support tracking the plume, if thought appropriate. (Admin Support should do the actual calls to arrange this support). _____
- REQUEST the RSM to authorize the use of a Helicopter to support the tracking of the plume IAW NC.EP-EP.ZZ-0604(Q), Helicopter Plume Tracking. (Admin Support should do the actual calls to arrange this support). _____
- TRACK all Field Teams located on the EPZ map. _____
- REVIEW periodically the Field Team Communicator's paperwork for completeness and correctness of data being recorded. _____

1.10 COORDINATE with the RSM for samples to be picked up from the Field Monitoring Teams and delivered to the proper location for counting, when appropriate. _____

1.11 SUPPLY guidance to the Offsite Field Monitoring Teams concerning how to handle survey equipment that is contaminated with ≥ 50k ccpm. Consideration should be given to bagging survey equipment prior to returning to EOF. _____

1.12 IMPLEMENT Attachment 7, Conversion Table For Iodine I-131 and NC.EP-EP.ZZ-0305(Q), Stable Iodine Thyroid Blocking, to determine if issuance of KI is needed for Offsite Field Monitoring Team Members. Inform the RSM of your recommendation. _____

1.13 COORDINATE with the RSM to determine the appropriate Emergency Worker Decon Facility the Offsite Field Monitoring Teams should report to, if it is impractical to return to the EOF. _____

1.13.1 REFER below for the State of Delaware's Decon Centers and locations: _____

- National Guard Armory Located on Broad Street in Middletown
- Delaware in a shopping center on the west side of the road behind Happy Harry's Pharmacy. This is south of the intersection of Route 13 and 301.

1.13.2 REFER below for the State of New Jersey's Decon Centers and locations: _____

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- Pennsville Fire Station Located at the intersection of Route 49 and Castle Height Drive across from the Pennsville Jr. and Sr. High Schools.
- Shiloh Fire Station Located at Route 49 on the east side of the road.

1.14 Consult with the RSM and recall Offsite Field Monitoring Teams if determined appropriate. _____

1.15 Perform the following, if necessary, IAW NC.EP-EP.ZZ-0308, Personnel/Vehicle Survey and Decontamination:

- Decon Field Team Members _____
- Arrange for Whole Body Counting of Field Team Members _____
- Decon Field Monitoring Team Vehicle _____

1.16 Coordinate the following, with the RSM, prior to relieving the Field Team members:

1.16.1 Determine if the Field Team members should be assigned to a relief station or allowed to go home. _____

1.16.2 Determine when the Field Team members should return to the EOF. _____

1.16.3 Consult with the States of New Jersey and Delaware to determine best routes to the Field Team's homes or the relief station, to avoid traffic jams, roadblocks and radiological concerns. _____

ATTACHMENT 2
Page 1 of 1

FIELD MONITORING TEAM BRIEFING GUIDANCE

1.0 Briefing Guidance

NOTE
This briefing may take place over the radio or cellular phone.

1.1 **At A Minimum, The Following Items Should Be Included In The Briefing and Recorded On Form – 6, Field Monitoring Team Briefing Form**:

1.1.1 ENSURE radio protocol is conducted in the following manner:

- REPEAT back instructions in accordance with the Work Standards Handbook _____
- USE the proper phonetic alphabet, when appropriate, IAW Work Standards Handbook (A-Alpha, B-Bravo, etc.) _____

1.1.2 REVIEW Attachment 10, Package Insert For Thyro-Block Tablets, to ensure it is filled out properly and signed.

1.1.3 FOLLOW the provisions for gas, tolls, and meals listed below:

- PAY tolls out of the Field Teams own money and submitted for reimbursement through EOF Admin Support Staff. _____
- PAY, or CHARGE on Corporate American Express card, meals and gas and then submitted for reimbursement. _____

1.1.4 PRESENT meteorological conditions and forecast. _____

1.1.5 PHONE Number to contact the OTC. This **can't** be a NETS phone. _____

1.1.6 USE Frequency 4 to contact the EOF for the Offsite Field Monitoring Team. (Frequency 1 may be used if thought necessary) _____

1.1.7 USE Frequency 1 to contact the TSC or the Onsite Field Monitoring Team. (Frequency 4 may be used if thought necessary) _____

ATTACHMENT 3
Page 1 of 2

OFFSITE FIELD MONITORING EQUIPMENT CHECKLIST

NOTE

- An inventory of the Onsite Field Monitoring Team Kits is not necessary, if they are properly sealed.
- Refer to NC.EP-AP.ZZ-1006(Z), Emergency Preparedness Inventory Radiation Protection, to perform an inventory of the Emergency Locker, if necessary.
- Lead blankets and respirators are not stored in the Offsite Field Monitoring Team Kits. The Forms Kits are stored in the same location as the Offsite Field Monitoring Team Kits, but not in the actual kits.
- This checklist is to be used to help ensure needed items are not left behind while loading the emergency vehicle. It is not to be used instead of the inventory list that is in NC.EP-AP.ZZ-1006(Z), Emergency Preparedness Inventory Radiation Protection.

- Low Volume Air Sampler with two air sample heads. _____
- One Count Rate Meter: E140N with a HP 210 probe. _____
- One Ion Chamber Dose Rate Meter : RO-2 or RO-2A or equivalent. _____
- One GM Meter : E520 with a HP 177C or 270 probe. _____
- Hi Range Dosimeters (0-5 R or 0-10 R) or equivalent electronic dosimeter. _____
- Low Range Dosimeters (0-200 mR or 0-500 mR) or electronic equivalent. _____
- One Dosimeter Charger. _____
- Absorbent Material. _____
- One Ten Mile (EPZ) N.J. and Delaware Map. _____
- One Onsite Map _____
- One Pair of Tweezers. _____
- Silver Zeolite Cartridges. (Use Cartridges marked for drills during drills and exercises.) _____
- Box of Air Sample Filters. _____

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- Gloves. _____
- Small Envelops for Particulate Air Sample Filters. _____
- Roll of Masking Tape. _____
- Small Plastic Bags. _____
- Flashlight. _____
- Spare Nine Volt Batteries _____
- Spare D Cell Batteries _____
- One Bottle of KI Tablets _____
- One First Aid Kit _____
- Box of Smear Papers. _____
- Protective Clothing/Paper Coveralls and Shoe Covers _____

ATTACHMENT 4
Page 1 of 3

FIELD MONITORING TEAM LOG

1.0 **OPERATING INSTRUCTIONS FOR EOF OFFSITE FIELD TEAM RADIO BASE STATION**

1.1 **To Operate The Radio Perform The Following:**

1.1.1 TURN on the radio power switches.

1.1.2 PRESS the F1 button located on the top of the radio to communicate with the Onsite Field Monitoring Teams or F4 to communicate with the Offsite Field Monitoring Teams.

1.1.3 POSITION the toggle switch on the left side of the radio to on to use the headset or off to use the speaker.

1.1.4 PRESS the button on the headset cord to transmit, if headset is in use.

1.1.5 PRESS the transmit bar on microphone transmit, if headset is not in use.

NOTE

Use this Attachment to assist in performing necessary calculations and document briefing updates.

- Log Offsite Field Monitoring Team Data on Form – 2, Air Sample Form.
- Track Offsite Field Monitoring Team's dose on Form – 3, SRD Log.

2.0 **OFFSITE DATA**

2.1 **The Field Team Communicator OR Designee Should Record The Following, As Appropriate:**

2.1.1 The Team's Phonetic (Alphabet) Name: _____

2.1.2 The Location the Team is being sent to:_____
_____
_____

2.1.3 Instrument Type/Serial Number: ____/____ ____/____

2.1.4 General Area Open Window Dose Rate: _____mR/Hr

ATTACHMENT 4
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2.1.5 General Area Closed Window Dose Rate: _____ mR/Hr

2.1.6 Ground Open Window Dose Rte: _____ mR/Hr

2.1.7 Ground Closed Window Dose Rate: _____ mR/Hr

2.1.8 Time On for A/S: _____

2.1.9 Time Off for A/S: _____

2.1.10 Average Flow Rate: _____ cfm

2.1.11 Particulate Background: _____ cpm

2.1.12 Particulate Sample: _____ cpm

2.1.13 Iodine Cartridge Background: _____ cpm

2.1.14 Iodine Cartridge Sample: _____ cpm

NOTE

- Refer to Form – 1, Offsite Calculations Form, for directions on performing air sample calculations.
- Section 3.0, Briefing Update, of this Attachment, should be used as changing conditions warrant.

ATTACHMENT 4
Page 3 of 3

3.0 **BRIEFING UPDATE**

3.1 **The Field Team Communicator OR Designee Should Record The Following As Appropriate:**

3.1.1 Time: _____:_____

3.1.2 Event Classification: _____

3.1.3 Plant Conditions: _____

_____

_____

_____

_____

_____

3.1.4 Radiological Conditions: _____

_____

_____

_____

_____

3.1.5 Additional Information Communicated to Offsite Team:

_____

_____

_____

_____

_____

ATTACHMENT 5

PARTICULATE AIR ACTIVITY VS. COUNT RATE TABLE

	SAMPLE VOLUME 5 FT.^{3}	SAMPLE VOLUME 10 FT.^{3}	SAMPLE VOLUME 15 FT.^{3}	SAMPLE VOLUME 20 FT.^{3}	SAMPLE VOLUME 25 FT.^{3}	SAMPLE VOLUME 30 FT.^{3}
(ccpm)	(uCi/cc)	(uCi/cc)	(uCi/cc)	(uCi/cc)	(uCi/cc)	(uCi/cc)
5.00E+04	1.59E-06	7.95E-07	5.30E-07	3.97E-07	3.18E-07	2.65E-07
4.50E+04	1.43E-06	7.15E-07	4.77E-07	3.57E-07	2.86E-07	2.38E-07
4.00E+04	1.27E-06	6.35E-07	4.23E-07	3.17E-07	2.54E-07	2.12E-07
3.50E+04	1.11E-06	5.55E-07	3.70E-07	2.77E-07	2.22E-07	1.85E-07
3.00E+04	9.53E-07	4.76E-07	3.18E-07	2.38E-07	1.91E-07	1.59E-07
2.50E+04	7.94E-07	3.97E-07	2.65E-07	1.98E-07	1.59E-07	1.32E-07
2.00E+04	6.35E-07	3.17E-07	2.12E-07	1.59E-07	1.27E-07	1.06E-07
1.50E+04	4.77E-07	2.38E-07	1.59E-07	1.19E-07	9.54E-08	7.95E-08
1.00E+04	3.18E-07	1.59E-07	1.06E-07	7.95E-08	6.36E-08	5.30E-08
9.00E+03	2.86E-07	1.43E-07	9.53E-08	7.15E-08	5.72E-08	4.77E-08
8.00E+03	2.54E-07	1.27E-07	8.47E-08	6.35E-08	5.08E-08	4.23E-08
7.00E+03	2.22E-07	1.11E-07	7.40E-08	5.55E-08	4.44E-08	3.70E-08
6.00E+03	1.91E-07	9.55E-08	6.37E-08	4.77E-08	3.82E-08	3.18E-08
5.00E+03	1.59E-07	7.95E-08	5.30E-08	3.97E-08	3.18E-08	2.65E-08
4.00E+03	1.27E-07	6.35E-08	4.23E-08	3.17E-08	2.54E-08	2.12E-08
3.00E+03	9.53E-08	4.76E-08	3.18E-08	2.38E-08	1.91E-08	1.59E-08
2.00E+03	6.35E-08	3.17E-08	2.12E-08	1.59E-08	1.27E-08	1.06E-08
1.00E+03	3.18E-08	1.59E-08	1.06E-08	7.95E-09	6.39E-09	5.30E-09
9.00E+02	2.86E-08	1.43E-08	9.53E-09	7.15E-09	5.72E-09	4.77E-09
8.00E+02	2.54E-08	1.27E-08	8.47E-09	6.35E-09	5.08E-09	4.23E-09
7.00E+02	2.22E-08	1.11E-08	7.40E-09	5.55E-09	4.44E-09	3.70E-09
6.00E+02	1.91E-08	9.55E-09	6.37E-09	4.77E-09	3.82E-09	3.18E-09
5.00E+02	1.59E-08	7.95E-09	5.30E-09	3.97E-09	3.18E-09	2.65E-09
4.00E+02	1.27E-08	6.35E-09	4.23E-09	3.17E-09	2.54E-09	2.12E-09
3.00E+02	9.53E-09	4.76E-09	3.18E-09	2.38E-09	1.91E-09	1.59E-09
2.00E+02	6.35E-09	3.17E-09	2.12E-09	1.59E-09	1.27E-09	1.06E-09
1.00E+02	3.18E-09	1.59E-09	1.06E-09	7.95E-10	6.36E-10	5.30E-10

Calculation Based on: $uCi/cc = \frac{ccpm * 4.5E\text{-}07\ uCi/dpm}{VOL\ (FT^3) * 2.832E{+}4\ (CC/FT^3) * EFF\ (0.10)}$

ATTACHMENT 6
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PARTICULATE AIR ACTIVITY VS. DOSE RATE TABLE

	SAMPLE VOLUME 5 (CUBIC FT.)	SAMPLE VOLUME 10 (CUBIC FT.)	SAMPLE VOLUME 15 (CUBIC FT.)	SAMPLE VOLUME 20 (CUBIC FT.)	SAMPLE VOLUME 25 (CUBIC FT.)	SAMPLE VOLUME 30 (CUBIC FT.)
(mRad/hr)	(uCi/cc)	(uCi/cc)	(uCi/cc)	(uCi/cc)	(uCi/cc)	(uCi/cc)
1.00E+03	1.59E-06	7.95E-07	5.30E-07	3.97E-07	3.18E-07	2.65E-07
5.00E+02	1.43E-06	7.15E-07	4.77E-07	3.57E-07	2.86E-07	2.38E-07
1.00E+02	1.27E-06	6.35E-07	4.23E-07	3.17E-07	2.54E-07	2.12E-07
9.50E+01	1.11E-06	5.55E-07	3.70E-07	2.77E-07	2.22E-07	1.85E-07
9.00E+01	9.53E-07	4.76E-07	3.18E-07	2.38E-07	1.91E-07	1.59E-07
8.50E+01	7.94E-07	3.97E-07	2.65E-07	1.98E-07	1.59E-07	1.32E-07
8.00E+01	6.35E-07	3.17E-07	2.12E-07	1.59E-07	1.27E-07	1.06E-07
7.50E+01	4.77E-07	2.38E-07	1.59E-07	1.19E-07	9.54E-08	7.95E-08
7.00E+01	3.18E-07	1.59E-07	1.06E-07	7.95E-08	6.36E-08	5.30E-08
6.50E+01	2.86E-07	1.43E-07	9.53E-08	7.15E-08	5.72E-08	4.77E-08
6.00E+01	2.54E-07	1.27E-07	8.47E-08	6.35E-08	5.08E-08	4.23E-08
5.50E+01	2.22E-07	1.11E-07	7.40E-08	5.55E-08	4.44E-08	3.70E-08
5.00E+01	1.91E-07	9.55E-08	6.37E-08	4.77E-08	3.82E-08	3.18E-08
4.50E+01	1.59E-07	7.95E-08	5.30E-08	3.97E-08	3.18E-08	2.65E-08
4.00E+01	1.27E-07	6.35E-08	4.23E-08	3.17E-08	2.54E-08	2.12E-08
3.50E+01	9.53E-08	4.76E-08	3.18E-08	2.38E-08	1.91E-08	1.59E-08
3.00E+01	6.35E-08	3.17E-08	2.12E-08	1.59E-08	1.27E-08	1.06E-08
2.50E+01	3.18E-08	1.59E-08	1.06E-08	7.95E-09	6.39E-09	5.30E-09
2.00E+01	2.86E-08	1.43E-08	9.53E-09	7.15E-09	5.72E-09	4.77E-09
1.50E+01	2.54E-08	1.27E-08	8.47E-09	6.35E-09	5.08E-09	4.23E-09
1.00E+01	2.22E-08	1.11E-08	7.40E-09	5.55E-09	4.44E-09	3.70E-09
5.00E+00	1.91E-08	9.55E-09	6.37E-09	4.77E-09	3.82E-09	3.18E-09
1.00E+00	1.59E-08	7.95E-09	5.30E-09	3.97E-09	3.18E-09	2.65E-09

Calculation Based on:
(1 mRad/hr. = 5000 ccpm)

$$uCi/cc = \frac{ccpm * 4.5E\text{-}07\ uCi/dpm}{VOL\ (FT^3) * 2.832E{+}4\ (CC/FT^3) * EFF\ (0.10)}$$

ATTACHMENT 7
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CONVERSION TABLE OF CORRECTED COUNTS PER MIN TO uCi/cc I-131

ccpm	uCi/cc	THY. COMMITTED DOSE EQUIVALENT (mRem/INHALATION hr)
1.13E+01	1.00E-08	1.30E+01
2.26E+01	2.00E-08	2.60E+01
5.65E+01	5.00E-08	6.50E+01
7.92E+01	7.00E-08	9.10E+01
1.13E+02	1.00E-07	1.30E+02
2.26E+02	2.00E-07	2.60E+02
5.65E+02	5.00E-07	6.50E+02
7.92E+02	7.00E-07	9.10E+02
1.13E+03	1.00E-06	1.30E+03
2.26E+03	2.00E-06	2.60E+03
5.65E+03	5.00E-06	6.50E+03
7.92E+03	7.00E-06	9.10E+03
1.13E+04	1.00E-05	1.30E+04
2.26E+04	2.00E-05	2.60E+04
3.40E+04	3.00E-05	3.90E+04
4.53+E04	4.00E-05	5.20E+04

EQUATIONS:

$$\frac{\text{corrected counts per minute (ccpm)}}{\text{(detector efficiency)(collection efficiency)(conversion factor - dpm to uci)(volume - cubic ft.)(conversion factor - cc to cubic ft.)}}$$

WHERE:

2.00E-03 ccpm/dpm	=	DETECTOR EFFICIENCY
90% (0.90)	=	COLLECTION EFFICIENCY
2.22E+06 dpm/uCi	=	CONVERSION FACTOR
10 Cubic Feet	=	VOLUME
2.832E+04 cc to Cubic Feet	=	CONVERSION FACTOR

uCi/cc * Dose Rate Conversion Factor (DRCF) = mRem/Inhalation hr.

WHERE:

1.30E+09 mRem/uCi/cc/hr In Accordance With Dose Rate Conversion Factor (DRCF) from EPA 400.

ATTACHMENT 8
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FIELD MONITORING TEAM RESPONSIBILITIES AND DIRECTIONS

1.0 FIELD MONITORING TEAMS

1.1 The Field Monitoring Teams Should Perform The Following:

1.1.1 CHECK the seals on Field Monitoring Kits. _____

A. PERFORM an inventory of kits IAW Attachment 3, Field Monitoring Equipment Checklist, if seals are broken. _____

> **NOTE**
>
> A satisfactory response check would be an upscale response of the instrument when on the lowest scale.

B. PERFORM a response check on instruments, even if the Field Monitoring Kits are intact. _____

1.1.2 OBTAIN a Dimension (DID) or Centrex telephone number for the OTC. _____

1.1.3 OBTAIN the emergency vehicle keys from:

- The Administration Support Manager. _____
- The EOF Security Guard.
- The EOF Red Key Lock Box.

1.1.4 OBTAIN an operable radio from the radio operator. _____

1.1.5 READ Attachment 10, Package Insert for Thyro-Block Tablets, and SIGN Form – 5, KI Side Effects/Administration Sign Off Form. _____

1.1.6 RECEIVE a briefing from:

A. The OTC, if available. _____

B. The RPS-Offsite, if the OTC, is not available. _____

1.1.7 ZERO SRDs, or electronic dosimeters, as appropriate. _____

1.1.8 COMPLETE the applicable information on Form - 3, Dosimetry Log. _____

1.1.9 IF the OTC is available, THEN give the completed Form 3 to the OTC. _____

1.1.10 IF the OTC is not available, THEN transmit the information on Form 3 to the RPS-Offsite. _____

1.1.11 LOAD the Offsite Field Monitoring Team Kits into the Emergency Vehicle. _____

1.1.12 PERFORM a radio and a telephone check from the emergency vehicle. The radio should be on frequency 4. Frequency 1 should be used to contact the Onsite Field Monitoring Teams. _____

1.1.13 INFORM the OTC, or the RPS-Offsite if he has control of the Field Team, if the Emergency Vehicle's gas gauge indicates < 1/2 full prior to going into the field and at any time while in the field. _____

2.0 DIRECTIONS

NOTE

- The Offsite Field Monitoring Team should provide input to the OTC or the RPS-Offsite as they think necessary, concerning sampling and moving to other than assigned locations due to radiological or meteorological conditions.
- The Offsite Field Monitoring Team members should report conflicting radiological or meteorological conditions to the OTC or RPS-Offsite, AS SOON AS POSSIBLE.

2.1 Offsite Field Monitoring Team Should Follow The Directions Listed Below:

2.1.1 REFER to Attachment 9, Offsite Field Monitor Locations, or the EPZ Atlas, for Offsite Field Monitoring Locations.

2.1.2 CONTACT with the Field Team Communicator should be maintained at least every 30 minutes.

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2.1.3 ENSURE Ground/General Area and Open/Closed window readings are taken at every sampling location.

2.1.4 ENSURE all air samples are a total of 10 cubic feet taken at a flow rate not to exceed 2 cfm, unless otherwise directed by the OTC or RPS-Offsite, if applicable.

2.1.5 PURGE the Iodine Cartridge in low background areas outside the plume.

2.1.6 COUNT all samples in low background areas outside the plume.

2.1.7 MONITOR dose rates and check dosimetry upon entering and exiting the plume.

2.1.8 USE proper contamination controls to prevent cross contamination of samples and to prevent contamination of instruments.

2.1.9 STORE all samples in the back corner of emergency vehicle and cover with the lead blanket.

2.1.10 PERFORM a cursory survey of all Field Team members and the inside and outside of the vehicle, at present field location, when told to return to the EOF.

2.1.11 REPORT back results.

2.1.12 CONTACT the OTC, upon returning to the EOF, and remain in the vehicle, until directed otherwise.

3.0 **RECOVERY**

3.1 **Perform the Following at the End of a Real Event, Drill, or Exercise**:

3.1.1 PERFORM and replenish and Offsite Field Monitoring Team Kits to ensure kits are kept in a ready mode NC.EP-AP.ZZ-1006(Z), Emergency Preparedness Inventory Radiation Protection, at the termination of a drill/exercise, or a real emergency. _____

3.1.2 PERFORM response checks on the instruments used. If instrument(s) fails a response check, inform the OTC, or RPS-Offsite if he has control of the Field Team . _____

3.1.3 ENTER initials and badge number on the tie wrap labels. _____

ATTACHMENT 9

OFFSITE EMERGENCY MONITORING LOCATIONS

NOTE

The following pages of this Attachment include Offsite Emergency Monitoring Stations for New Jersey and Delaware. The descriptions and directions to each of the locations are contained in this attachment. Most monitoring points are situated at intersections, end of roads or landmarks. In addition, many points are identified by symbols painted on utility poles. These symbols consist of 2 to 5 letters or numerals (ENE4, etc.) painted in green above 3 orange circles arranged in a triangle. All distances are approximate.

LOCATION	MILE	AZIMUTH	DESCRIPTION
N7	5.8	6.5°	Drive 1.6 miles North on Hancocks Bridge Road from the Hancocks Bridge intersection. Turn left onto Ft. Elfsborg Road proceed 3.5 miles to curve at the intersection of Road 624 and 625. The marked pole at the intersection is the monitoring location.
N10	9.6	355.5°	Drive 3.5 miles North on Route 49 from the town of Salem until you reach Lighthouse Road. Turn left onto Lighthouse Road and proceed 2 miles to Fort Mott Road. Turn left onto Fort Mott Road. Proceed 1.5 miles to the end of the road. The marked pole at the end of the road is the monitoring location.
N20	10.5	10°	Drive 3.8 miles North on Route 49 from the town of Salem you reach Richmans Dairy. The monitoring location is located in front of the restaurant.

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
NNE7	5.8	21°	Drive 1.6 miles North on Hancocks Bridge Road from the Hancocks Bridge Intersection. Turn left onto Ft. Elfsborg Road and proceed 2.2 miles to Amwellbury Road. The marked pole at this intersection is the monitoring location.
NNE8	6.4	11°	Drive 1.6 miles North on Hancocks Bridge Road from the Hancocks Bridge intersection. Turn left onto Ft. Elfsborg Road and proceed 4.2 miles to Country Club Road. The marked pole at the intersection is the monitoring location.
NNE10	8.7	25°	Drive North on Market Street 0.3 miles from the town of Salem. Turn left onto Hancock Avenue and proceed to the end of the Avenue. The marked pole located 50 feet around the corner is the monitoring location.
NNE10a	7.4	26.5°	Drive 0.8 miles South on Walnut Street from East Broadway, to the New Salem High School. The marked pole across the street from the school is the monitoring location.
NNE10b	7.3	10°	Drive 1.6 miles North from the Hancocks Bridge intersection, towards the town of Salem on Hancocks Bridge Road. Turn left onto Ft. Elfsborg Road and proceed 4.3 miles to Sinnickson Landing Road. Turn left and proceed 1.5 miles. After crossing a bridge, the monitoring locations on the left prior to the first house on the right.

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
NNE20	10.3	28°	Drive North 2.6 miles on Market Street to the Memorial Hospital of Salem County. The marked pole located in front of the hospital is the monitoring location.
NE4	3.8	50.5°	Drive 0.5 miles North from Hancocks Bridge intersection toward the town of Salem. Turn left onto Front Street, which will become Poplar Street. Front Street is the last street before the bridge. Proceed to the gate located at the end of the road. The marked concrete pole located at the gate is the monitoring location.
NE5	4.1	52°	Drive 0.5 miles North from the Hancocks Bridge intersection toward the town of Salem. Turn left onto Front Street, which will become Poplar Street. Front Street is the last street before the bridge. Proceed 0.9 miles to a farm with a large white and green barn. The marked pole across the street from the farm is the monitoring location.
NE7	5.1	55°	Drive 0.2 miles North from the Hancocks Bridge intersection to the Lower Alloways Creek Municipal Building. The monitoring location is across the street from the Municipal Building on a pole south of the post office.

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
NE7a	5.8	40.5°	Drive 1.7 miles North from the Hancocks Bridge intersection toward the town of Salem to the intersection of Hancocks Bridge and Quinton Road and Salem/Hancock Bridge Road. The marked pole is the monitoring location.
NE10	8.8	48.5°	Drive 3.5 miles east from the town of Salem on Route 49 to the intersection of Routes 49 and 581. This is a stoplight located in Quinton. Turn left onto Route 581 and proceed 0.2 miles to the Waterworks Road intersection. The marked pole at this intersection is the monitoring location.
NE10a			
NE20	10.8	45°	Drive East 3.8 miles on Grant Street in the town of Salem to Clancy Road. (Grant Street turns into Quaker Neck Road). The marked pole located at the Clancy Road intersection is the monitoring location.
ENE4	3.7	75°	Drive 3.5 miles on the access road from the Salem and Hope Creek Generating Stations. Located on the west side of the road is an air sampler. The monitoring location is located at the air sampler.
ENE5	4.1	62.5°	Drive 4.0 miles from the Salem and Hope Creek Generating Stations, to the intersection of Grosscup Road. The marked pole located at the Grosscup Road intersection is the monitoring point location.
ENE5a	4.1	62.5°	Drive 4.8 miles from the Salem and Hope Creek Generating Stations, to the intersection of Grosscup Road. The marked pole located at the Grosscup Road intersection is the monitoring point location.

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
ENE7	5.9	65°	Drive 6.8 miles from the Salem and Hope Creek Generating Stations to the Harmersville intersection. The stoplight located at the LAC General Store
ENE10	8.6	68°	Drive 6.8 miles from the Salem and Hope Creek Generating Stations to the Harmersville intersection. The stoplight located at the LAC General Store is the Harmersville intersection. Proceed straight through the stop light and bear to the left. This should be Harmersville/Peck Corner Cohansey Road. Proceed 2.6 miles to the intersection of Jericho Road. The marked pole at this intersection is the monitoring location.
ENE20	10.5	73°	Drive 6.8 miles from the Salem and Hope Creek Generating Stations to the Harmersville intersection. The stoplight located at the LAC General Store is the Harmersville intersection. Proceed straight through the stop light and bear to the left. This should be Harmersville/Peck Corner Cohansey Road. Proceed 4.5 miles to the intersection of Route 49. The monitoring location is at this intersection.

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
E1	0.9	106°	The fork in the Access Road between the Salem and Hope Creek Generating Stations. Located on pole to the right of air sampler.
E4	3.5	86°	Drive 3.3 miles from the Salem and Hope Creek Generating Stations, down the Access Road to the sharp bend. The monitoring location is at the sharp bend on the gantry pole.
E4a	3.5	88°	Drive 3.1 miles from the Salem and Hope Creek Generating Stations, down the Access Road to the sharp bend. The monitoring location is at the sharp bend on the gantry pole.
E7	6.5	85.5°	Drive 6.8 miles from the Salem and Hope Creek Generating Stations to the Harmersville intersection. The stoplight located at the LAC General Store is the Harmersville intersection. Proceed straight through the stop light and bear to the left. This should be Harmersville/Pecks Corner Cohansey Road. Turn right onto Canton Road and proceed 3 miles to Frogg Ocean Road. The marked pole located at this intersection is the monitoring location.
E10	6.5	90.0°	Drive 6.8 miles from the Salem and Hope Creek Generating Stations to the Harmersville intersection. The stoplight located at the LAC General Store is the Harmersville intersection. Proceed straight through the stop light and bear to the left. This should be Harmersville/Pecks Corner Cohansey Road. Turn left onto Buckhorn Rd and proceed 4.5.
E20	12.6	91°	Drive 12.5 miles East, from the town of Salem, on Route 49 to the intersection of East/West Roadstown Road. The marked pole at this intersection is the monitoring location.

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
ESE7	6.4	104°	Drive 6.8 miles from the Salem and Hope Creek Generating Stations to the Harmersville intersection. The stoplight located at the LAC General Store is the Harmersville intersection. Turn right onto Canton Road and proceed 3.7 miles to Long Bridge Road. Turn right and proceed 1.6 miles to the end of the road. Turn left onto Stow Neck Road and proceed 0.3 miles. The marked pole on is the monitoring location.
ESE10	8.1	103°	Drive 6.8 miles from the Salem and Hope Creek Generating Stations to the Harmersville intersection. The stoplight located at the LAC General Store is the Harmersville intersection. Turn right onto Canton Road and proceed 5.2 miles to the intersection of Gum Tree Corner. The monitoring location is at this intersection.
ESE20	11.3	118°	Drive 6.8 miles from the Salem and Hope Creek Generating Stations, to the Harmersville intersection. The stoplight located at the LAC General Store is the Harmersville intersection. Turn right onto Canton Road and proceed 3.4 miles to the end of the road. Turn left onto Bacon's Neck Road and proceed 0.3 miles to Market Road. The marked pole located at this intersection is the monitoring location.

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
SE10	8.8	129°	Drive 6.8 miles from the Salem and Hope Creek Generating Stations to the Harmersville intersection. The stoplight located at the LAC General Store is the Harmersville intersection. Turn right onto Canton Road and proceed 5.2 miles to Gum Tree Corner and bear right onto Gum Tree Corner. Proceed 3.4 miles to the end of the road. Turn right onto Bacon's Neck Road and proceed 0.6 miles until you reach Tindull Island Road. Turn left and proceed 0.2 miles until you reach Bayside Road. Turn left and proceed 2.0 miles to the fork in the road. Take the right fork and proceed to the end of the road. The marked pole located at the end of the road is the monitoring location.
SE20	11.4	125°	Drive 6.8 miles from the Salem and Hope Creek Generating Stations to the Harmersville intersection. The stoplight located at the LAC General Store is the Harmersville intersection. Turn right onto Canton Road and proceed 5.2 miles to Gum Tree Corner and bear right onto Gum Tree Corner. Proceed 3.4 miles to the end of the road. Turn right onto Bacon's Neck Road and proceed 0.6 miles until you reach Tindull Island Road. Turn left and proceed 1.5 miles to Ragged Island Road. Turn left and proceed to the end of the Road. The pole marked at the end of the road is the monitoring location.

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
SSE10	9.7	159°	Drive to the Delaware Memorial Bridge and proceed 30 miles on Rte 13 South to Rte 6. Turn left onto Rte 6 and proceed 8.0 miles to the end of the road. The monitoring location is at the end of the road at Wood-land Beach on a telephone pole on the beach.
S5	4.2	187°	Drive to the Delaware Memorial Bridge and proceed 18 miles on Rte 13 South to Odessa. Turn left onto Main St/Rte 299 and proceed 6 miles South to Rd 453.(Rte 299 turns into Rte 9 and Rd 453 is also known as Cedar Swamp Rd).Turn left onto Rd 453 and proceed 2.8 miles to the end of the road. The monitoring location is at the end of the road on a concrete barrier.
S7	6.3	179.5°	Drive to the Delaware Memorial Bridge and proceed 18 miles on Rte 13 South to Odessa. Turn left onto Main St/Rte 299 and proceed South 9 miles to Rd 491.(Rte 299 turns into Rte 9). Proceed 1.5 miles on Rd 491 to the intersection. Monitoring location is at this intersection.
S10	9.1	177°	Drive to the Delaware Memorial Bridge and proceed 30 miles on Rte 13 South to Rte 6. Turn left onto Rte 6 and proceed 5.2 miles to Rte 9. Turn left on Rte 9 and proceed 1.8 miles to Rd 321. The monitoring location is at this intersection.

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
SSW4	3.9	203°	Drive to the Delaware Memorial Bridge and proceed 18 miles on Route 13 South to Odessa. Turn left onto Main Street/Route 299 and proceed South 6 miles to Road 453. (Route 299 turns into Route 9 and Road 453 is also known as Cedar Swamp Road). Turn left onto Road 453 and proceed 2.0 miles, the monitoring locations is on the left side of the road.
SSW7	5.6	198.5°	Drive to the Delaware Memorial Bridge and proceed 18 miles on Route 13 South to Odessa. Turn left onto Main Street/Route 299 and proceed 9 miles to Road 454. (Route 299 turns into Route 9 and Road 454 is also known as Saw Mill Branch Road). The monitoring location is at this intersection.
SSW10	9.1	203.5°	Drive to the Delaware Memorial Bridge and proceed 24 miles on Route 13 South to Road 469. (Road 469 is also known as Black Diamond Road). Turn left onto Road 469 and proceed 2 miles to Road 30 and 45. The monitoring location is at this intersection.
SSW20	11.6	199°	Drive to the Delaware Memorial Bridge and proceed 30 miles on Route 13 south to Route 6 in Symra. The monitor location is at this intersection in the back of "Wendy's" parking lot.

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
SW5	4.9	216°	Drive to the Delaware Memorial Bridge and proceed 18 miles on Route 13 South to Odessa. Turn left onto Main Street/Route 299 and proceed 6 miles to Road 453. (Route 299 turns into Route 9 and Road 453 is also known as Cedar Swamp Road). The monitoring location is on the pole in the front of light house.
SW7	6.0	235°	Drive to the Delaware Memorial Bridge and proceed 18 miles on Route 13 South to Odessa. Turn left onto Main Street/Route 299 and proceed 3.5 miles to Road 452. (Route 299 turns into Route 9 and Road 452 is also known as Fieldsboro Road). The monitoring location is at this intersection in the island.
SW10	9.0	230°	Drive to the Delaware Memorial Bridge and proceed 22 miles on Route 13 South to the intersection of Route 71. The monitoring location is at this intersection on the south side of Route 13 at the 2nd right of triangle.
SW20	12.3	225°	Drive to the Delaware Memorial Bridge and proceed 22.5 miles on Route 13 south to Road 471. Turn right onto Road 471 proceed 3 miles to Route 15. (Road 471 is also known as Blackbird Forest Road and Rooute 15, Road 47 and Vandyke Greenspring Road). Turn right and drive 1.1 miles to Dexter Corner. The monitoring location is at this intersection on pole with adjacent junction box on the North East corner.

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
WSW5	4.4	255°	Drive to the Delaware Memorial Bridge and proceed 18 miles on Route 13 South to Odessa. Turn left onto Main Street/Route 299 and proceed 2.6 miles to road 440. (Route 299 turns into Route 9. Proceed North on Route 9. Road 440 is also known as Thomas Landing Road). Turn right onto Road 440 and drive 0.8 miles to the end of the paved road. Monitoring location is at the end of the paved road.
WSW5a	4.2	263°	Drive to the Delaware Memorial Bridge and proceed 9 miles on Rte 13 South to Rte 72. Turn left onto Rte 72 and proceed 11.5 miles to the bridge over the Appoquinimink River. (Rte 72 turns into 9). You will pass W5 monitoring location on the North side of the bridge. Drive 0.5 miles to the monitoring location.
WSW7	6.0	252°	Drive to the Delaware Memorial Bridge and proceed 9 miles on Rte 13 South to Odessa. Monitoring location is at the Intersection of Rt 299 and Rt 9.
WSW10a	7.7	240°	Drive to the Delaware Memorial Bridge and proceed 20 miles on Route 13 South to Road 25. (Road 25 is also known as Pine Tree Road). The monitoring location is in the North end of the parking lot at this point.
WSW10	9.4	239°	Drive to the Delaware Memorial Bridge and proceed 20 miles on Route 13 South to Road 25. (Road 25 is also known as Pine Tree Road). Turn right onto Road 25 and proceed 1.8 miles to the Townsend Elementary School. The monitoring location is at the school.

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LOCATION	MILE	AZIMUTH	DESCRIPTION
WSW20	11.0	242°	Drive to the Delaware Memorial Bridge and proceed 20 miles on Rte 13 South to Rd 25. (Rd 25 is also known as Pine Tree Rd). Turn right and proceed 3.0 miles to Rd 459. (Rd 459 is also known as Grears Corner Rd). The monitoring location is at this intersection.
W5	4.2	271.5°	Drive to the Delaware Memorial Bridge and proceed 9 miles on Rte 13 South to Rte 72. Turn left onto Rte 72 and proceed 11.5 miles to the bridge over the Appoquinimink River. (Rte 72 turns into 9). The monitoring location is on the North side of the bridge.
W7	6.6	264.5°	Drive to the Delaware Memorial Bridge and proceed 18 miles on Rte 13 South to Odessa. Turn left onto Main St/Rte 299. The Monitoring location is at this intersection at the Delaware State Police Station.
W10	9.9	263.5°	Drive to the Delaware Memorial Bridge and proceed 18 miles on Rte 13 South to Odessa. Go West on Rte 299 and proceed 3 miles to Middletown. Turn right onto S. Broad St/Rte 71. The monitoring location is at Middletown National Guard Armory.
W10a	9.9	266°	Drive to the Delaware Memorial Bridge and proceed 18 miles on Rte 13 South to Odessa. Turn right onto Main St/Rte 299 and proceed 3 miles to Middletown. Turn left onto S. Broad St/Rte 71.
W20	11.2	261.5°	Drive to the Del. Memorial Bridge and proceed 18 miles on Rte 13 South to Odessa. Turn right onto Main St/Rte 299 and proceed 4.5 miles through Middletown to Road 10 (Levels Road). The monitoring location is at the intersection.

ATTACHMENT 9

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LOCATION	MILE	AZIMUTH	DESCRIPTION
WNW4	3.4	294°	Drive to the Delaware Memorial Bridge and proceed 9 miles on Rte 13 South to Rte 72. Turn left onto Rte 72 and proceed to Belts Rd.(Rte 72 turns into Rte 9).Turn left onto Belts Rd and proceed to the "T" in the road. Turn right on New Road South to the lighthouse gate. The monitoring location is at the gate.
WNW5	4.0	295°	Drive to the Delaware Memorial Bridge and proceed 9 miles on Rte 13 South to Rte 72. Turn left onto Rte 72 and proceed 10 miles to a sharp 90 curve to the left.(Rte 72 turns into Rte 9). The monitoring location is on the North side of the road.
WNW7	6.7	291.5°	Drive to the Delaware Memorial Bridge and proceed 14.5 miles on Rte 13 South to Rd 420 (Rd 420 is also known as Pole Bridge Rd). Turn left at light. The monitoring location is in the WAWA parking lot.
WNW10	8.5	288.5°	Drive to the Delaware Memorial Bridge and proceed 14.5 miles on Rte 13 South to Rd 15. Turn right onto Rd 15 and proceed 1.8 miles to Rd 413. (Rd 15 is also known as Boyds Corner Rd and Rd 413 is also known as Jamison Corner Rd). The monitoring location is at the intersection.

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
WNW20	10.4	292.5°	Drive to the Delaware Memorial Bridge and proceed 14.5 miles on Rte 13 South to Rd 15. Turn right onto Rd 15 and proceed 3.5 miles to Rte 896 /301.(Rd 15 is also known as Boyds Corner Rd).Turn right onto Rte 896 /301 and proceed 1 mile to the Summit Airport. The monitoring location is at the Summit Airport next to a ditch full of large rocks.
NW4	3.8	319.5°	Drive to the Del. Memorial Bridge & proceed 9 miles on Rte 13 South to Rte 72. Turn left onto Rte 72 & proceed 8.5 miles to Augustine Bch. (Rte 72 turns into Rte 9). The monitoring location is at Augustine Bch adjacent to sign.
NW7	5.4	312°	Drive to the Del. Memorial Bridge & proceed 14.5 miles on Rte 13 South to Rd 420 (Pole Bridge Road at Boyds Corner). Turn left onto Rd 420 & proceed 2.5 miles to the intersection of Rd 420 and Rd 2 (Port Penn Road). The monitoring location is at this intersection.
NW10	8.4	312°	Drive to the Del. Memorial Bridge & proceed 11 miles on Rte 13 South to St. Georges Bridge. Cross over the bridge & turn right at the first road. The monitoring location is at this intersection.
NW20	11.5	310°	Drive to the Del. Memorial Bridge & proceed 6 miles on Rte 13 South to Rte 71 (Red Lion Road). Bear right onto Rte 71 & proceed 4.5 miles to the intersection of Rd 409. (Rd 409 is also known as Kirkwood St. Georges Rd). The monitoring location is on the south side of RR tracks next to RR signal.

ATTACHMENT 9
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LOCATION	MILE	AZIMUTH	DESCRIPTION
NNW5	4.0	328°	Drive to the Del. Memorial Bridge & proceed 9 miles on Rte 13 South to Rte 72. Turn left onto Rte 72 and proceed 7.5 miles to the small bridge just south of Port Penn.(Rte 72 turns into Rte 9.) Turn left just prior to the bridge (Fishers Wharf Road) & proceed 0.2 miles to the end of the road. The monitoring location is at the end of the road in front of the sewage plant where an air sampler is located. (NOTE: Map location is wrong. Correction location is about one inch south on map on Rte. 9).
NNW7	5.2	332.5°	Drive to the Delaware Memorial Bridge and proceed 9 miles on Route 13 South to Route 72. Turn left onto Route 72 and proceed 6.5 miles to Thorntown Road intersection.(Route 72 turns into Route 9. The monitoring location is on the river side at this intersection at the entrance to the Port Penn Trail.
NNW10	7.8	342°	Drive to the Delaware Memorial Bridge and proceed 9 miles on Route 13 South to Route 72. Turn left onto Route 72 and proceed 4 miles to Delaware City.(Route 72 turns into Route 9). Cross over the small bridge and turn right at the first road.(Follow the signs to the Delaware National Armory/Governor Bacon Health Center). Turn left at the first road and proceed 0.4 miles to the end of the road. The monitoring location is in the front of the DNREC Operations Center, East of blue garage.
NNW10b	9.5	328°	Drive to the Delaware Memorial Bridge and proceed 9 miles on Route 13 South to Route 72. Turn left onto Route 72 and proceed 4 miles to Delaware City.(Route 72 turns into Route 9). Monitoring location is located at Motiva Co. HQ in Delaware City

ATTACHMENT 9

LOCATION	MILE	AZIMUTH	DESCRIPTION
NNW20	12.3	331°	From Delaware Memorial Bridge take Route 13 South (Delaware) 7.6 miles to Bear-Tybouts Road and make a left. The monitoring point is at the North East Corner of Park & Ride at the light.

ATTACHMENT 10

PACKAGE INSERT FOR THYRO-BLOCK TABLETS

1.0 HOW POTASSIUM IODIDE WORKS

- Certain forms of iodine help your thyroid gland work right. Most people get the iodine they need from foods, like iodized salt or fish. The thyroid can "store" or hold only a certain amount of iodine.

- In a radiation emergency, radioactive iodine may be released in the air. This material may be breathed or swallowed. It may enter the thyroid gland and damage it. The damage would probably not show itself for years. Children are most likely to have thyroid damage.

- If you take potassium iodide, it will fill your thyroid gland. This reduces the chance that harmful radioactive iodine will enter the thyroid gland.

2.0 WHO SHOULD NOT TAKE POTASSIUM IODIDE

The only people who should not take potassium iodide are people who know they are allergic to iodide. You may take potassium iodide even if you are taking medicine for a thyroid problem (for example, a thyroid hormone or antithyroid drug).

3.0 HOW AND WHEN TO TAKE POTASSIUM IODIDE

Potassium Iodide should be taken as soon as possible after being directed to. You should take one dose every 24 hours. More will not help you because the thyroid can "hold" only limited amounts of iodine. Larger doses will increase the risk of side effects. You will probably be told not to take the drug for more than ten days.

4.0 SIDE EFFECTS

- Usually, side effects of potassium iodide happen when people take higher doses for a long time. You should be careful not to take more than the recommended dose or take it for longer than you are told. Side effects are unlikely because of the low dose and the short time you will be taking the drug.

- Possible side effects include skin rashes, swelling of the salivary glands, and "iodine" (metallic taste, burning mouth and throat, sore teeth and gums, symptoms of a head cold, and some times stomach upset and diarrhea).

ATTACHMENT 10

- A few people have an allergic reaction with more serious symptoms. These could be fever and joint pains, or swelling of parts of the face and body and at times severe shortness of breath requiring immediate medical attention.

- Taking iodine may rarely cause overactivity of the thyroid gland, underactivity of the thyroid gland or enlargement of the thyroid gland (goiter).

5.0 WHAT TO DO IF SIDE EFFECTS OCCUR

If the side effects are severe or if you have an allergic reaction, stop taking potassium iodide and call a doctor.

FORM – 1

Page 1 of 1

OFFSITE CALCULATIONS FORM

1.0 **Offsite Calculations Form**

Person Performing Calculations : _____/_____ Date: _____
(Print/Sign)

1.1. Go to Section 2.0 of Attachment 4 for data to perform calculations.

1.2. Subtract step 2.1.6 from step 2.1.5 and Multiply that value by the beta correction factor of 5 for the mRad/hr and record below:
_____ mRad/hr.
(Gen. Area)

1.3 Subtract step 2.1.8. from step 2.1.7 and multiply that value by the beta correction factor of 5 for the mRad/hr.and record below:
_____ mRad/hr.
(Ground)

1.4 Subtract step 2.1.11 from step 2.1.12 for the corrected counts per minute (ccpm) for particulate samples and record below:
_____ ccpm.

1.5 Calculate the particulate uCi/cc IAW Attachment 5, Air Activity vs. Count Rate Table, or IAW Attachment 6, Air Activity vs. Dose Rate Table and record below:
_____ uCi/cc.

1.6 Subtract step 2.1.13 from step 2.1.14 for the corrected counts per minute (ccpm) for iodine samples and record below:
_____ ccpm.

1.7 Calculate the iodine uCi/cc IAW Attachment 7, Direct Conversion Per Minute to uCi/cc for I-131 and record below:
_____ uCi/cc.

FORM – 2

PAGE 1 OF 1

FIELD SAMPLING FORM

DATE	TEAM NAME	LOCATION	OPEN WINDOW GRD (Mr/HR)	CLOSED WINDOW GRD (mR/hr)	OPEN WINDOW GA (mR/hr)	CLOSED WINDOW GA (mR/hr)	CART. READING (ccpm)	PART. READING (ccpm)

FORM – 3

Page 1 of 1

DOSIMETRY LOG

NAME	DOSIMETER NUMBER	SOCIAL SECURITY NUMBER	ISSUED DATE	RTN DATE	INTIAL VALUE (mRem)	END VALUE (mRem)	TOTAL DOSE (mRem)

FORM – 4

Page 1 of 1

FIELD MONITORING/CREST DATA vs. PROJECTED DATA

LOCATION DESIGNATION	FIELD TEAM DESIGNATION	CREST DESIGNATION	METER READING (mR/hr)	PROJECTED TEDE RATE (mR/hr)

FORM - 5

Page 1 of 2

KI SIDE EFFECTS/ADMINISTRATION SIGN OFF FORM

AUTHORIZED BY: _____

ADMINISTERED BY: _____

My signature indicates that I have read and understand Pages 1 & 2 of Attachment 10, Package Insert For Thyroid–Block Tablets.

PRINT NAME	SOCIAL SEC. NO.	INDIVIDUAL'S SIGNATURE	DATE/TIME	COMMENTS

FORM – 5
Page 2 of 2

NAME OF INDIVIDUAL	SOCIAL SEC. NO.	KI DOSAGE	AUTHORIZED BY DATE/TIME	ADMINISTERED BY DATE/TIME	COMMENTS

FORM - 6

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FIELD MONITORING TEAM BRIEFING FORM

1.0 **TEAM BRIEFING FORM**

OTC: _____ / _____ / _____

(PRINT) (SIGN) (DATE)

Event Classification/Time: _____ / _____

_____

Plant Conditions: _____

_____

_____

Wind Direction: (Expected Plume Direction)

- From: _____ (Degrees) To: _____ (Degrees)
- From: _____ To: _____

Specific Monitoring Location(s) (If Applicable)

- From: _____ To: _____
  (Landmarks if Applicable)

Initial Areas or Locations To Be Surveyed: (Refer to Onsite Emergency Monitoring Locations Map or 10 Mile EPZ map located in the Field Monitoring Kit, as appropriate).

_____

_____

Wind Speed: _____ (MPH)

FORM - 6
Page 2 of 3

Protective Clothing Requirements: _____

_____

_____

NOTE
Ensure Field Monitoring Team members are respirator qualified prior to instructing them to wear respirators.

Respiratory Protection Requirements: _____

_____

Additional Specific Radiological Concerns: _____

_____

_____

Phonetic Alphabet Name for Offsite Team Leader and Members of the Field Monitoring Team:

- **Alpha Team**: Name of Team Leader: _____

  Name of Team Member: _____
- **Bravo Team:** Name of Team Leader: _____

  Name of Team Member: _____
- **Charlie Team:** Name of Team Leader: _____

  Name of Team Member: _____

FORM - 6
Page 3 of 3

- ____ **Team:** Name of Team Leader: _____

  Name of Team Member: _____

- ____ **Team:** Name of Team Leader: _____

  Name of Team Member: _____

PERSONNEL ATTENDING BRIEFING:

NAME (PRINT)	NAME (SIGNATURE)	SOCIAL SECURITY NUMBER	REMAINING DOSE IF FIELD TEAM MEMBER (REM)

PSE&G CONTROL COPY # EPIP059

PSEG NUCLEAR LLC

NC.EP-EP.ZZ-0604(Q) - REV. 01

HELICOPTER PLUME TRACKING

USE CATEGORY: II

REVISION SUMMARY:

1. Phone numbers for helicopter coordinators were revised in Step 5.1.1. This revision is editorial.
2. Deleted Attachment 6, Procedure Completion Sign-off Sheet. This attachment is not required by NAP-1, causes confusion, and adds no value to the procedure.
3. This revision satisfies the requirement for a biennial review.

IMPLEMENTATION REQUIREMENTS:

This procedure is effective for use upon issue.

5-29-01

APPROVED: _____ EP Manager — 5/9/01 Date

APPROVED: _____ Vice President – Operations — N/A Date

HELICOPTER PLUME TRACKING

TABLE OF CONTENTS

1.0 PURPOSE

Provide procedural guidance for the Offsite Team Coordinator and the Offsite Team – Helicopter, in helicopter plume tracking during a declared emergency.

2.0 PREREQUISITES

2.1 Prerequisites to be Followed Prior to Implementation:

- Implement this procedure at the discretion of the RSM.

3.0 PRECAUTIONS AND LIMITATIONS

3.1 Precautions and Limitations to be Followed Prior to Implementation:

3.1.1 It is recommended that initials be used in the place keeping sign-offs, instead of checkmarks, if more than one person may implement this procedure.

3.1.2 Personnel who implement this procedure shall be trained and qualified IAW the Emergency Plan.

4.0 EQUIPMENT / MATERIAL REQUIRED

As provided in the EOF.

5.0 PROCEDURE

CAUTION

This procedure will be implemented only at the pilot's discretion.

5.1 The Offsite Team Coordinator (OTC):

5.1.1 PERFORM the following duties:

A. DETERMINE the need for plume tracking by helicopter. _____

B. RECEIVE approval for use of helicopter plume tracking from the RSM. _____

C. REQUEST helicopter support by contacting:

- The Help Desk operator at Newark extension 973-430-6059 _____
- One of the two helicopter pilot coordinators:

Name	Office	Home	Pager	
Michelle DeVenio	973-430-6059	(973)691-8601	973-690-8861	_____
Laura Quille	973-430-6059	(732)899-4311		_____

D. IMPLEMENT to Attachment 1, Offsite Team Coordinator Checklist for Helicopter Plume Tracking. _____

5.2 **The Offsite Team - Helicopter**

5.2.1 IMPLEMENT Attachment 5, Offsite Team - Helicopter Checklist for Plume Tracking. _____

6.0 RECORDS

Return completed procedure and any information or data thought to be pertinent by the dose assessor, to the EP Manager.

7.0 REFERENCES

7.1 **References**

None

7.2 **Cross References**

7.2.1 NC.EP-EP.ZZ-0602 (Q) Radiological Dose Assessment

7.2.2 NC.EP-EP.ZZ-0603 (Q), Field Monitoring

7.2.3 NC.EP-EP.ZZ-0308 Personnel/Vehicle Survey and Decontamination

ATTACHMENT 1

Page 1 of 2

OFFSITE TEAM COORDINATOR CHECKLIST FOR PLUME TRACKING BY HELICOPTER

1.0 OTC DUTIES

1.1 The OTC Should Perform The Following:

1.1.1 RECORD current date and time:

Date/Time: ____-____-____/____:____

1.1.2 RECEIVE a briefing from the RSM to ensure that a helicopter has been requested for use. _____

1.1.3 OBTAIN meteorological data, plot the plume, and provide the team a briefing AW NC.EP- EP.ZZ-0603 (Q), Field Monitoring. _____

> **NOTE**
>
> Air samples should be taken after the helicopter has landed and at least 20 yards away from the helicopter, if it is running.

1.1.4 DIRECT the Offsite Helicopter Team in the necessity of taking air samples. _____

1.1.5 ENSURE the Offsite Helicopter Team is aware of plume tracking vectors and wind direction changes every 15 minutes, or as appropriate. _____

> **NOTE**
>
> Land miles should be used for all communications and documentation.

1.1.6 USE Attachment 4, Nautical Mile Conversion, to convert Nautical miles to Land miles as appropriate. _____

1.1.7 DIRECT the Offsite Helicopter Team to utilize Attachment 2, Survey Data Sheet Plume Definition, to log traversing data. _____

1.1.8 DIRECT the Offsite Helicopter Team to utilize Attachment 3, Survey Data Sheet - Helicopter Field Data, to log dose rates and air sample for specific locations. _____

1.1.9 PLOT Plume's apparent edges and centerline on EPZ map. _____

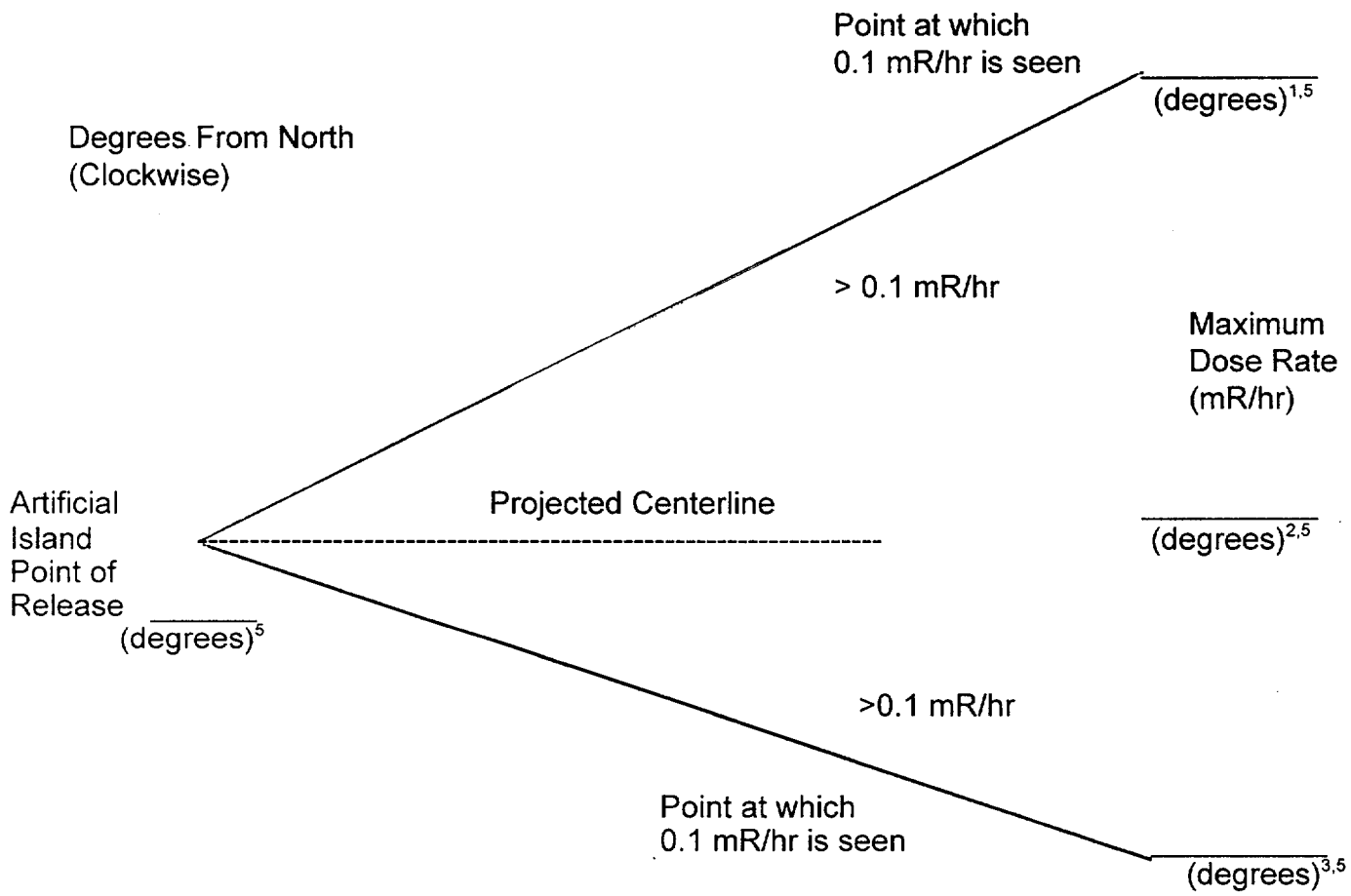
1.1.10 RECALL the Offsite Helicopter Team from plume tracking, as appropriate. _____

1.1.11 ENSURE that adequate and complete debriefings have been accomplished prior to being relieved. _____

ATTACHMENT 2
Page 1 of 1

SURVEY DATA SHEET PLUME DEFINITION

/ /	:	(Feet)		
Date	Time	Altitude	Team	Land Miles From Plant



Footnotes

1 Plume width definition point
2 Maximum dose rate
3 Plume width definition point
4 Land Miles from plant at which data was collected
5 The helicopter pilot may be capable of supplying degree headings and miles from the plant using onboard instrumentation (loran, etc.).

ATTACHMENT 3
Page 1 of 1

SURVEY DATA SHEET - HELICOPTER FIELD DATA

Date _____ Wind Speed _____ Wind Direction _____

Team Name _____

Members/Pilot	TLD # / SRD #	Instrument(s)	Calibration Due Dates

NOTE

1. The helicopter pilot may be capable of supplying degree headings altitudes, and nautical miles from the plant using onboard instruments (loran, etc.).

- Air Sample counting should be done with an E-140N or equivalent.

Time	(Note 1) Land Miles From Plant	(Note 1) Radial Degrees From North	(Note 1) Altitude in Feet	O/W mR/hr	C/W mR/hr	Flow Rate (cfm)	Total Time (min)	Tot. Vol. $Ft.^3$	Bkgd (cpm)	Cart-ridge (cpm)

ATTACHMENT 4
Page 1 of 1
NAUTICAL MILE CONVERSION CHART

NOTE

A nautical mile is equal to 1825 meters.

METERS	LAND MILES	NAUTICAL MILES
100	0.06	0.05
200	0.12	0.11
300	0.19	0.16
400	0.25	0.22
500	0.31	0.27
600	0.37	0.32
700	0.44	0.38
800	0.55	0.43
900	0.56	0.49
1270	0.79	0.69
1609	1.00	0.87
2414	1.50	1.30
3218	2.00	1.74
4023	2.50	2.17
4827	3.00	2.61
5632	3.50	3.04
6436	4.00	3.48
7241	4.50	3.91
8045	5.00	4.34
8850	5.50	4.78
9654	6.00	5.21
10459	6.50	5.65
11263	7.00	6.08
12068	7.50	6.52
12872	8.00	6.95
13677	8.50	7.38
14481	9.00	7.82
15286	9.50	8.25
16090	10.00	8.69

ATTACHMENT 5
Page 1 of 2

OFFSITE TEAM - HELICOPTER CHECKLIST FOR PLUME TRACKING

1.0 **The Offsite Team – Helicopter**

1.1 **The Offsite Team – Helicopter Should :**

1.1.1 OBTAIN a briefing from the OTC and log on Attachment 3. _____

1.1.2 IMPLEMENT a new Attachment 3 for additional space to log data, wind speed or direction changes. _____

1.1.3 OBTAIN an Emergency Field Team kit for helicopter use. _____

1.1.4 PERFORM inventory ONLY if not properly sealed in accordance with NC.EP-AP.ZZ-1006(Z)/EPIP 1006. _____

1.1.5 PERFORM response checks on instruments whether the seal on the kit is intact or not. Replace batteries or instrument, if necessary. _____

> **NOTE**
>
> A satisfactory response check would be an upscale response of the instrument when on the lowest scale.

1.1.6 PERFORM a communications check with the EOF using predetermined method (cell phone, radio, etc.). _____

1.1.7 PROCEED to the assigned survey areas and continuously monitoring the dose rates. _____

1.1.8 IF air sampling is to be performed, THEN ensure all air samples are taken at approximately 20 yards from the helicopter, if running. _____

1.1.9 REQUEST updates in MET information. _____

ATTACHMENT 5
Page 2 of 2

1.1.10 DOCUMENT survey results on Attachment 3. Attachment 2 may be used for traversing the plume at a specified altitude and distance from the site for defining plume width. _____

1.1.11 IMPLEMENT Attachment 4 to convert Nautical Miles to Land Miles. Land Miles should be used for all communications with the EOF and documentation. _____

1.1.12 IF aerial surveys are to be discontinued, THEN report back to the EOF and brief the OTC on survey results. _____

1.1.13 REPORT back to the EOF and brief the OTC as well as turn in the Survey Data Sheet(s), upon completion. _____

1.1.14 PEFORM any decontamination, as necessary, in accordance with NC.EP-EP.ZZ-308(Q)/EPIP 308S(H), Personnel/Vehicle Survey and Decontamination. _____